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# ENTOMOLOGIST'S MONTHLY MAGAZINE:

CONDUCTED BY

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## VOL. IX.

"*Guessing is not knowing, and faith is not science.*"
B. D. WALSH.

LONDON:
JOHN VAN VOORST, 1, PATERNOSTER ROW.
1872-73.

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LONDON:

NAPIER, PRINTER, SEYMOUR STREET, EUSTON SQUARE, N.W.

# PREFACE.

The time has arrived when, according to our biennial custom, we should address a few words to our readers.

As regards mere financial matters, the current circulation of the Magazine is greater than at any former period; the receipts for Vol. viii slightly exceeding those for Vol. iv, notwithstanding the advantage the latter has received from the sale of back stock.

Having no pecuniary end in view (other than that of endeavouring to "make both ends meet") we have been enabled to maintain a thoroughly independent position, and have thereby gained, as we believe, the confidence of those whose esteem we value.

The character of the Magazine has remained almost unaltered from its commencement, and is, judging from the experience of nine years, apparently that best suited to the majority of its supporters. At all events, we have not exhibited that most inherent sign of weakness —instability of purpose. Controversy has been avoided as much as possible, because in it there is always a tendency to allow feeling to obtain the mastery over judgment. The pruning-knife has occasionally been vigorously applied; and, although its use may have sometimes caused temporary irritation, we feel sure that, in most cases, calm reasoning has justified the operation. Our object is to further entomological science, not to gratify the self-esteem of individuals.

1, Paternoster Row:
*May*, 1873.

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## ERRATA.

(N.B.—Many of these are Authors' corrections).

Page 1, line 20 from top, *for* "blackish" *read* "whitish."
„ 83, „ 15 „ „ „ "CLYRAS" „ "OLYRAS."
„ 97, „ 12 „ „ „ "carena" „ "carina."
„ „ „ 17 „ „ „ "larger" „ "longer."
„ „ „ 25 „ „ „ "as" „ "of the metasternum."
„ 127, „ 14 „ „ „ "Swale" „ "Iwade."
„ 133, „ 7 „ bottom, *for* "apical" „ "posterior."
„ 134, „ 4 „ top, *for* "anteriorly" „ "posteriorly."
„ 136, „ 9 „ „ *dele* "of."
„ 150, „ 8 „ „ *for* "in" *read* "on."
„ „ „ 16 „ „ „ "elytra" „ "elytron."
„ „ „ 25 „ „ „ "contracted" „ "compacted."
„ „ „ 35 „ „ „ "near the metasternum" *read* "behind."
„ 151, „ 11 „ bottom, *for* "species" *read* "genus."
„ 177, „ 8 „ „ „ "Risley Moss" „ "Whitley Reed."
„ 205, „ 18 „ „ „ "*et tuberculis*" „ "*e tuberculis.*"
„ „ „ 17 „ „ „ "*corum*" „ "*eorum.*"
„ 211, „ 16 „ top, „ "*fulcra*" „ "*coxæ.*"
„ 240, „ 6 „ „ „ "*Liburnia*" „ "*Delphax.*
„ 259, „ 13 „ „ „ "with" „ "into."
„ 261, lines 19 and 20 from bottom, *dele* from "by" to "behind," inclusively.
„ 262, line 12 from top, add "broadly" before last word.
„ „ „ 30 „ „ *for* "processes" *read* "process."
„ „ „ 31 „ „ „ "plain" „ "plane."
„ 271, „ 12 „ bottom, *for* "*Scoparia*" *read* "*Sericoris.*"
„ „ „ „ „ „ „ "*S.*" „ "*Scoparia.*"

THE
Entomologist's Monthly Magazine
VOLUME IX.

# DESCRIPTION OF A REMARKABLE NEW SPECIES OF *AGRIONINA* FROM MADAGASCAR.

BY R. M'LACHLAN, F. L. S.

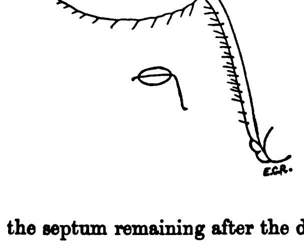
### PSILOCNEMIS ALATIPES, *n. s.*

*Caput suprà nigrum, lineâ albidâ transversâ utrinque signatum; frons albidus. Thorax albidus, utrinque lineâ nigrâ signatus. Pedes albi; genubus tarsisque anticis nigricantibus; tibiis intermediis posticisque valde explanato-dilatatis, elongato-ovalibus. Abdomen saturate brunneum; segmentis (basalibus duobus exceptis) nigro-terminatis; segmento 1° albido, dimidio basali nigro; 2° albido, infrà lineisque latis duabus lateralibus, postice angulatim sursum convergentibus, nigris; 3° basi summo lineâ albidâ tenui transversâ, fere geminatâ, signato. Alæ vitreæ, ad costam levissime flavido-tinctæ, sub-acutæ; pterostigmate nigro* (♂).

*Head* black above, posteriorly with a narrow transverse whitish line on each side; front portion of the vertex and the front and mouth organs (excepting the tips of the mandibles) blackish; or the whole head might be described as whitish, with a broad transverse black band above: *antennæ* with the second and third joints of nearly equal lengths, but the third much thinner, two basal joints whitish, third joint blackish (rest broken).

*Prothorax* whitish, black at the sides; the posterior lobe very large, only slightly raised, transversely oblong, the angles slightly rounded.

*Thorax* whitish; sides broadly black at the base of the intermediate legs; a vestige of a black humeral line indicated only at its lower end, and a broad, black complete line from the base of the posterior wings; finally the under-side is almost entirely black between the coxæ. *Legs* entirely white, excepting the knees and tarsi of the anterior pair, and the terminal joint of the tarsi of the others, which are blackish; spines long and black; the tibiæ of the intermediate and posterior pairs are enormously dilated, elongate-oval, resembling the septum remaining after the dispersal of the seeds of some cruciferous plants (*e. g.*, *Lepidium sativum*).



JUNE, 1872.

*Abdomen* with the basal segment whitish, blackish at its base; second segment whitish, black beneath, and with a black angulated line on each side, leaving a sub-quadrate, spade-shaped white space above, with a peduncle not extending to the posterior suture; genital organs black: third to sixth segments of nearly equal lengths, the third much more than twice the length of the second, each dark brown and blackish at its posterior end, third segment narrowly whitish above at its anterior end (the rest wanting).

*Wings* with a slight yellowish tinge along the costal margin, narrow, the apex sub-acute; pterostigma rhomboidal, black; sixteen post-cubital nervules in the anterior wings.

Length of anterior wing, 21 millimétres; posterior wing, 20 mm. Expanse of wings, 43 mm. Length of body to end of sixth segment of abdomen, 33 mm.

I owe the possession of this remarkable insect to the liberality of C. Ward, Esq., who received it from his collector in Madagascar, Mr. Crossley, by whom it was taken in the interior of that island. According to the comparative lengths of the second and third joints of the antennæ, and of the second and third segments of the abdomen, the insect falls into the sub-genus *Psilocnemis* of De Selys; but I believe he is now of opinion that the separation of *Psilocnemis* from *Platycnemis* will eventually be found to have been based upon insufficient characters. The dilatation of the two posterior pairs of tibiæ is enormous, much more than twice as much as is seen in *Platycnemis latipes* of the south of Europe, which was hitherto supposed to possess this peculiarity in the most intensified form, and too exaggerated to be compared with that of the British *Platyc. pennipes.* The species of *Psilocnemis* were hitherto thought to be peculiar to Asia and the Asiatic islands. The female of *P. alatipes* will probably be found to want the dilatation of the tibiæ.

Lewisham: *May*, 1872.

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## DESCRIPTIONS OF NEW SPECIES OF DIURNAL *LEPIDOPTERA* FROM MADAGASCAR.

BY CHRISTOPHER WARD, F.L S.

### ACRÆA MARANSETRA, *n. s.*

♂. *Upper-side:* fore-wing transparent, glossy, with the base rufous, anterior margin shaded with brown; hind-wing red, a detached spot of black near the base, below the costal nervure; under this, and bordering on the inner margin, a cluster of confluent spots, beyond, a band of five spots, curving inwards to the anterior margin, all black; the outer margin edged with brown, with a band of seven detached semi-circular spots, black, and tipped outwardly with red.

*Under-side:* as above, but with hind-wing much paler, and the spots more clearly defined.

♀ resembles the male.

Expanse, ♂, $1\frac{8}{10}$; ♀, 2 inches. Taken *in copulâ.*

### Acræa Masamba, *n. s.*

*Upper-side:* fore-wing transparent, with margins and nervures clouded with brown, base rufous, a small brown spot within the cell; hind-wing red, with hinder margin brown and inner margin yellowish; a band of nine black spots, commencing near the base of anterior margin, and curving round to the centre of inner margin; within this band, near the base, a cluster of five black spots.

*Under-side:* as above, but hind-wing grey, with the base red.

Expanse, 2 inches.

### Acræa Masonala, *n. s.*

*Upper-side:* fore-wing transparent, glossy, broadly suffused with rosy pink, nervures and anterior margin brown; hind-wing red, continued nearly to the outer margin, which is transparent and glossy; following the outer margin, where the red ends, a circle of five clear black spots, the centre one the smallest, and placed rather nearest the margin.

*Under-side:* as above, but lighter red mingled with grey, and with five small black spots at the base.

Expanse, 2¼ inches.

### Charaxes Analava, *n. s.*

*Upper-side:* both wings light yellowish-green; fore-wing, beyond the middle, black, containing a vertical curved band of five light green spots, the second and fifth from the top very small, a similar spot touching the end of the cell; hind-wing, outer margin broadly bordered with black, narrowing and shading into the green at the anal angle; three tails, green, the centre the smallest; fore-wing falcate, and both wings dentated.

*Under-side:* beautifully marbled with green, black, and silver; fore-wing green, lightest at the outer margin; the cell crossed midway by a narrow band of silver, containing a black spot, and near the extremity by a similar broader band, edged with black; beyond this, a narrow curved line of black, edged outwardly with silver; hind-wing green, with a vertical band midway, curving inwards, of lighter green and silver, edged with black; beyond the middle, following the outline of the wing from the anterior margin to the anal angle, a series of ocelli, the upper one the most distinct, silvery grey, edged with black and light green, the lower ones light green, suffused with silvery-grey. Antennæ green.

Expanse, 3¼ inches.

**Halifax:** *April,* 1872.

# BRITISH *HEMIPTERA*—AN ADDITIONAL GENUS AND SPECIES.

BY J. W. DOUGLAS.

## Section 5.—LYGÆINA.

## Family 1.—RHYPAROCHROMIDÆ.

### Genus *EMBLETHIS*, Fieb.

Long-oval, broad.

*Head* short, pentagonal, deeply inserted in the thorax. *Antennæ* short, slender; 1st joint short, stout; 2nd more than twice the length of 1st; 3rd shorter than 2nd; 4th rather shorter than 3rd, thin fusiform. *Eyes* small, not projecting beyond the anterior angles of the pronotum. *Rostrum* reaching to the middle of the metasternum; 1st joint as long as the head, 2nd reaching to the anterior coxæ.

*Thorax: pronotum* short, trapezoidal, or rather sub-quadrate, the sides anteriorly rounded off to the angles, flatly produced throughout; front emarginate; disc convex, less so on the posterior third; posterior margin nearly straight. *Scutellum* large, long-triangular. *Elytra* broad; *clavus* narrow; *membrane* with five nerves, the two inner ones sinuate at the base. *Legs: thighs*, 1st pair with six to eight small spines on the under-side; *tarsi* long, 1st joint longer than the 2nd and 3rd together, on the 3rd pair twice as long.

Among the British genera, this comes nearest to *Calyptonotus*, D. and S.

### Species 1.—EMBLETHIS VERBASCI.

*Lygæus verbasci*, Fab., S. R., 235, 161 (1803).
„ *pilifrons*, Zett., k. Vet. Acad. Handl. 71, 21 (1819).
*Pachymerus marginepunctatus*, H.-Schf., Panz. F. G. 118, 7 (*nec* Wolff).
*Emblethis platychilus*, Fieb., Europ. Hem. 197, 1 (1861).
„ *verbasci*, Stål, Hem. Fab., i, 79, 1 (1868).

Dull, upper surface dingy ochreous, obscured by close, fine, black punctures; *face*, *antennæ*, and *legs* setose; *pronotum*, sides broadly foliaceous, naked.

*Head:* middle lobe prominent, its sides anteriorly set with short, stout, projecting black hairs; there are also one or two similar hairs immediately before each eye. *Antennæ* piceous, apex of 1st joint ochreous, beset throughout with short, projecting hairs, strong on the 1st and 2nd joints. *Eyes* black. *Rostrum* dark piceous.

*Thorax: pronotum*, the foliaceous sides broad, naked, ochreous, both on the upper and under-sides with large black punctures, sometimes confluent; disc covered with fine black punctures, anteriorly, in places, a little distant, giving the surface a marbled appearance. *Scutellum* punctured like the pronotum, at the basal angles a black spot divided obliquely by an ochreous line. *Elytra: clavus* and *corium* with black punctures, less close and regular than on the pronotum and scutellum; *corium,* nerves pale, with a row of the dark punctures along each, anterior margin rather wide, slightly recurved, ochreous, with large, distant, black punctures sometimes confluent; *membrane* smoky, crenulate, nerves darker, with very narrow pale margins; in the interstices, a row of small, pale spots, and in the second space at the base, a large, black spot. *Sternum* black, posterior margin of each segment, the sides of the 1st, and a large spot on the coxal sheaths, whitish. *Legs* ochreous; *coxæ* black; *thighs* all with brown spots, somewhat in rows, or with transverse streaks, closer towards the base, which is black; 1st pair beneath, on the inner edge,* with six or seven small, short, black spines, of which the first three are a trifle the largest; 2nd and 3rd pairs, especially on the upper and inner sides, with very short, scarcely projecting spines; *tibiæ* with distant, short, projecting black spines, the 1st pair on the under-side only; at the base, an indistinct black ring, apex infuscated; *tarsi* infuscated.

*Abdomen* above, black, *connexivum* pale, with sub-triangular, black spots at the base and margin of the segments; under-side piceous.

Length, 3 lines nearly.

Described from a ♀ found at Deal, in March last, among the roots of dwarf sallow, by Mr. J. G. Marsh, and kindly sent for inspection.

The antennæ, rostrum and legs are darker than described by Fieber, but these differences do not seem to me to be material.

The genus *Emblethis* contains only one other species, *Cimex arenarius*, Lin., which may also be expected to occur in Britain, but it appears to be much rarer on the continent than *verbasci.* It is very like it generally, but may be distinguished by the side margins of the pronotum being beset with spinose hairs.

Lee: *4th May*, 1872.

## ADDITIONS, &c., TO THE LIST OF BRITISH *COLEOPTERA*, WITH DESCRIPTIONS OF THREE NEW SPECIES.

BY E. C. RYE.

LEPTUSA TESTACEA, Ch. Brisout, in Gren. Cat. et Mat., &c., 1863, p. 16.

A single example of this interesting species, originally recorded from Toulon, was taken by Mr. G. C. Champion on 6th June, 1870, out of sea-weed on the sandy shore at Whitstable, Kent, and, when alive, according to its captor, had much the *facies* of *Phytosus nigriventris.* It has been named for me by its describer.

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* In the generic characters, Fieber says the spines are on the "outer" edge; but, in describing the species, he puts, correctly, on the "inner" edge.—J. W. D.

It is linear, flattened, testaceous, with dark abdomen, very short elytra, and long antennæ, of rather dull appearance, and about 1⅛ lin. in length.

SCYDMÆNUS PRÆTERITUS, *sp. n.*

? *Sparshallii*, Schaum, Redt., ? ? Fairm.; *nec* Denny, Thoms.

*Fusco-piceus, nitidus, antennis pedibusque testaceis, illis ad apicem fere gradatim incrassatis, articulis* 8—10 *transversis; prothorace elongato-quadrato, lateribus antice rotundatis, pube fulvâ tenuiori sub-erectâ sparsim vestito, disco lævissimo, basi impressione transversâ, in foveolam elongatam oblique anticeque ad marginem ductam utrinque desinentem, minus fortiter impresso, plicâ medianâ nullâ; elytris ovato-elongatis, minus convexis, lateribus a tertiâ parte basali ad apicem gradatim rotundato-contractis, basi singulatim profunde foveolatis, plicâque humerali instructis, obsoletissime punctulatis, pubescentiâ fulvâ, certo sitû fere striatim dispositâ, minus dense vestitis.*

*Long. corp.* ½—⅝ *lin. (Anglic.).*

Allied to *S. Sparshallii*, Denny, from which it differs in its darker colour; longer and somewhat less convex shape; longer, narrower, and apically more gradually contracted elytra, the pubescence of which is in certain lights almost disposed in striæ, and the punctuation of which is much less evident; rather longer thorax, which exhibits very thin and scant pubescence, and has the transverse basal impression fainter and with only *one* fovea on each side at the margin; proportionally smaller eyes, and antennæ stouter at the apex; the three apical joints being considerably and the 8th (and in a less degree the 7th) evidently, thickened; and the two basal joints more elongate.

*S. præteritus* has somewhat the *facies* of a very small specimen of *elongatulus;* from which its unpunctured thorax, the basal furrow whereof has no middle keel, and its less convex elytra at once distinguish it.

I have long had an example of this species set aside in my collection, taken by myself in the Croydon district; and I find two specimens of it also set apart in Mr. G. R. Waterhouse's cabinet, and taken by him in the Isle of Wight and at Erith (associated with ants), and another in Mr. E. A. Waterhouse's collection, taken on the chalk near Seaford on the south coast; recently, I have seen another individual, taken by Mr. G. C. Champion on the chalk, near Caterham, also associated with ants; and Dr. Sharp informs me that he also has it, distinguished from the species known to us as *Sparshallii.*

Denny's locality for the latter is moss in a damp wood, Norfolk; and most if not all of our specimens of it come from the midland and eastern counties.

The insect which I have just described has been returned to me from Paris as *S. Sparshallii*, Denny; but, apart from the fact of the latter having been originally described by our countryman, who is only recently dead, and to whom the *Scydmænidæ* of the chief British collections (in all of which that I have seen, *S. Sparshallii* agrees with my conception of that species) in all probability have been submitted, I think that the colour, build and pubescence of the insect figured by Denny as *Sparshallii* evidently point to the species known to us by that name. Denny's *description* is not very precise; but the ferruginous colour, *gradually* clavate antennæ (in which his colored figure agrees, the much magnified separate outline having the 8th joint absurdly enlarged, and quite at variance with the description and colored figure), punctured thorax and elytra which he mentions, agree well with our *Sparshallii*, and not with *præteritus*. Against these points, however, must be set the fact that Denny only states the thoracic basal furrow of his insect to extend a little way up the sides, omitting to notice the second minute fovea that occurs in it on each side between the middle and the outer margin.

Schaum originally (Anal. ent., 1841, p. 13) merely referred to Denny's *Sparshallii* as a species which he had not seen, and apparently closely allied to *elongatulus*: afterwards (Germ., Zeitschr. f. d. Ent., v, p. 467) he considers he has identified it from German and other examples; but his mention of its having no foveæ in the transverse thoracic groove, of the fact of Erichson's specimen not agreeing with Denny's description in the punctuation of the head and thorax, and of its color also being dark pitchy brown (for which he endeavours to account by considering Denny's specimen to have been immature), show with almost certainty that his insect is that I have just described. Indeed, were it not that, in giving the diagnostic characters of his *S. helvolus* (p. 467), he states the transverse thoracic basal groove to be *not* so deep as in his *Sparshallii*, I should, as all other characters agree well enough, have no hesitation in considering *helvolus* to be identical with Denny's *Sparshallii*. Thomson's *helvolus* (Skand. Col., ix, p. 358) has evidently nothing to do with Schaum's species of that name.

The color and thoracic characters of Fairmaire's *Sparshallii* (Faun. ent. Franç., Col., p. 348) agree with Schaum's and not with Denny's species: but the French author terms the thorax square, and much narrower than the elytra, the apex of which is, according to him, abruptly rounded. He appears to have described a *mélange* of the two species; as those latter characters suit Denny's insect.

Redtenbacher (Faun. Austr., ed. 2, p. 274), so far as he goes, follows Schaum; but Thomson (*l. c.*, x, p. 352), though quoting the Austrian author, has evidently recognised our *Sparshallii* ("*rufo-piceus, foveolis* 4 *basalibus in impressione profundâ sitis*").

SCYDMÆNUS PUMILIO, Schaum (Stett. ent. Zeit., vii, 1846, p. 356), is the *minutus* of Chaudoir (Bull. Mosc., 1845, p. 186) re-named, on account of the prior species of that name of Fabricius and Gyllenhal. Chaudoir states it to be smaller and proportionately shorter than *exilis*, Er. (*vicinus*, Chaud., *teste* Schaum), to have a very slight longitudinal medial thoracic line, and to occur under pine bark. According to Schaum, it is really most nearly allied to his *helvolus*, and is easily distinguishable from all in its section by being, next to *nanus*, the smallest in the whole genus, about ¼ line long. This species has been recorded as British, apparently solely on the opinion of M. Aubé, as the characters given for it (*cf.* Ent. Ann. 1863, p. 90) do not accord either with Chaudoir's or Schaum's remarks. I think, therefore, its name must be erased from our list. The few supposed British exponents of it that I have seen are small *Sparshallii*.

CLAMBUS PUNCTULUM, Gyll. This species must also, I think, be erased from our list. It was introduced by Mr. G. R. Crotch, who stated that it differed from *minutus* in being about half the size, and gradually attenuate behind;—characters not entirely agreeing with those given by Gyllenhal, who (Faun. Suec., iv, p. 515), comparing it with *minutus*, says (besides the difference in size) that its elytra are entirely black, more obtuse and but little narrowed behind (acuminate in *minutus*), its thorax has the lateral margins only narrowly rufescent, and its legs are black, with only slightly lighter tarsi. I possess one of Mr. Crotch's specimens, which is a rather small example of *C. minutus*.

PHALACRUS BRISOUTI, *sp. n.*

*Breviter ovatus, convexus, niger, nitidissimus, antennis pedibusque (ac præcipue anticis) piceo-nigris, tarsis dilutioribus; elytris subtilissime punctato-striatis, interstitiis punctulis paucis minutissimis, fere obsoletis, certo sitû strias quasi simulantibus, notatis, superficie totâ (oculo fortiter armato) vage, obsoletissime, transversim minute rugulosâ; antennarum articulo apicali intus ad apicem leviter sinuato.*

*Long. corp.* 1 *lin. (Anglic.).*

I characterize as above the insects mentioned by me in Ent. Ann., 1872, p. 67, as in my own collection, from Lee, and taken by Mr. G. C. Champion near Gravesend, which I referred with much doubt to *P.*

*brunnipes*, Bris., and which M. Brisout has returned to me as not that species, but another, allied to and distinct from his *P. seriepunctatus*. At the same time, M. Brisout has corroborated as true *brunnipes*, another insect (from Mr. G. R. Waterhouses's collection, taken, I believe, by Mr. Brewer) sent to him by me.

I have not seen *P. seriepunctatus*, but, from the description (in Gren. Cat. et Mat., &c., 1863, p. 44), my insect would seem to be considerably smaller and rather less convex, of a shorter oval form, with rather darker legs and antennæ, and the elytra not exhibiting the appearance of being covered with closely packed rows of punctures.

From the insect returned to me as his *brunnipes* by M. Brisout, my species differs in being smaller, less convex (the thorax especially), of a rather shorter oval outline, and with the punctures of the striæ much more delicate and of the interstices almost entirely obsolete.

The very convex shape and short oval form, short and broadly clubbed antennæ and distinctly punctate-striate elytra of *P. substriatus* at once remove that insect from all of these species. *P. Brisouti* seems most nearly allied to *corruscus*, from which it differs in its average much smaller size (I have, however, an example of *corruscus* scarcely 1 line in length), its rather lighter colored fore legs, tarsi and antennæ, the club of which is rather broader and not so long, the apical joint being conspicuously broader and shorter, and not so acuminate, but slightly flexuous on the inner side towards the apex, and in its elytra being more obtusely rounded behind, and more evidently punctate-striate, with the interstitial punctures much less numerous. Its extremely delicate punctuation renders accurate definition very difficult: in certain lights there is, under a high power, a tendency to very minute and faint transverse rugulosity; in others, the unpunctured portions near the striæ catch the eye and cause the elytra to appear to possess narrow, smooth, and somewhat elevated longitudinal markings.

CRYPTOPHAGUS PUNCTIPENNIS, Ch. Brisout.

M. Brisout informs me that the specimens mentioned by me in Ent. Ann., 1872, p. 69, are certainly to be referred to this species: the character, therefore, of its smaller size, as compared with *pilosus*, that has been attributed to it, is no longer reliable, as one of my examples, corroborated by M. Brisout, is as large as (if not larger than) my largest *pilosus*.

ATOMARIA BADIA, Er.

The individual taken at Esher by Dr. Power, and provisionally referred by me as above (Ent. Ann., 1872, p. 70), is considered by M. Brisout to be Erichson's *A. badia*.

ATOMARIA FUMATA, Er.

M. Brisout has also returned the insect brought forward by myself under this name, and recently queried in Dr. Sharp's catalogue, as the continental notion of *A. fumata.*

CORTICARIA OBSCURA, Ch. Brisout.

M. Brisout considers the insect recorded by me with some reservation under this name (*cf.* Ent. Ann., 1872, p. 71) to be possibly *longicollis*, Thoms., with the diagnostic characters of which, however, as compared with *C. serrata*, it does not seem to me in the least to accord. As, however, there are so many species described in this genus, of which there is great uncertainty, I refrain for the present from adding to the difficulty of disentangling them by describing this one as new without further evidence.

ANTHICUS SCOTICUS, *sp. n.*

*Plumbeo-niger, opacus, pube griseo-micanti dense vestitus, antennis pedibusque vel luride testaceis vel fere totis piceo-fuscis; capite lato, postice truncato, fortius confertim fere ruguloso-punctato, lineâ longitudinali medianâ lævi; thorace brevi, confertim at minus fortiter punctato; elytris quam thorax multo latioribus, ad basin truncatis, convexis, lateribus pro parte apicali tertiâ breviter ovatis, sat fortiter fere confluentim punctatis.* *Long. corp.* 1¼ *lin. (Anglic.).*

This is the insect discussed by me in Ent. Mo. Mag., iii, p. 233, and Ent. Ann., 1868, p. 70; and which, as it does not in the least accord with *A. ater* or *A. flavipes*, Panz., to both of which it has been referred, and as I have recently had it returned by M. Ch. Brisout as unknown to him, I now describe as new. It is the *Anthicus* 6 *sp. nov.?* of Wat. Cat., and has been found, according to Mr. A. Murray, at Raehills and in Aberdeenshire; it has also been sent to me by Mr. Morris Young, of Paisley, and has recently occurred in some numbers to Dr. Boswell Syme and Mr. E. A. Waterhouse on the shores of Loch Leven.

Of our recorded species it most resembles *A. angustatus*, Curtis, from which it differs in its stouter and shorter antennæ, larger size, broader build, darker limbs, broader and shorter thorax, which is more globular in front, and has no tendency to pitchy-red in color, much broader elytra, which are transversely truncate at the base (with very evident and almost square shoulders), and rather more closely punctured, &c.

The much finer punctuation alone of *A. flavipes* is sufficient to show that this Scotch species cannot be referred to it with propriety; though it is evidently closely allied to it.

One of my specimens seems, in certain lights, to possess a faint tendency to a dark brown humeral blotch.

SMICRONYX REICHEI, Gyll., in Schön. Gen. et Spec. Curc., vii, p. 314.

Of this species, originally described from the south of France, two British examples have come under my notice; one, in very fine condition, taken by Mr. E. A. Waterhouse in the early summer of 1871, at Folkestone, by sweeping on the top of the cliff at the commencement of the Warren; the other, larger, but much abraded, taken in August, 1868, by Mr. G. C. Champion, by promiscuous sweeping between Folkestone and Dover. This insect, on account of its robust build and stout limbs, has much the facies of an unnaturally large example of *Tanysphyrus lemnæ;* compared with its largest British congener, *S. jungermanniæ*, it is rather larger, with a thicker and much duller rostrum and much more thickly and coarsely punctured thorax; and, when in good condition, is densely clothed with large grey and brown scales, which give it a tessellated appearance, much more conspicuous than in the slightly variegated and much more feebly built *S. cicur*.

10, Lower Park Field, Putney:
*May*, 1872.

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*Capture of Carabus intricatus in south Devon.*—A magnificent example of this noble *Carabus* has been taken by my wife to-day, about two miles from Newton Abbot, on the road to Torquay. It is a female, and one of the finest I have ever seen, measuring nearly 17 lines in length. It occurred beneath a log of wood, amongst some large beech trees belonging to Sir Walter Carew, at Aller Bridge.—T. V. WOLLASTON, Teignmouth: *April 18th*, 1872.

*Capture of Carabus auratus in London.*—Last month, I found a lively specimen of this somewhat dubious British species among some purchased radishes, which the seller assures me are of English growth.—R. BURRY, Brecknock Street, Camden Town: *May*, 1872.

*A new locality for Acrognathus.*—On Saturday, the 27th April last, I caught here a specimen of *Acrognathus mandibularis*, flying in the hot sunshine. This appears to be the third locality in England where that rare species has been found; both the other places of its capture (Darenth and Epping) being also in the neighbourhood of London. The insect's build and habit would scarcely lead one to expect to catch it on the wing.

*Cicindela sylvatica* occurred here as early as 13th April this year.—JOHN GRAY, Claygate, Esher: *May*, 1872.

*Captures of Coleoptera near Maidstone.*—By way of completing the list of noticeable species which I met with at Bearsted, I send a supplementary account of such as were not enumerated at pp. 155 and 254 of vol. vii. These are:—*Bembidium bruxellense*, *B. Mannerheimei* (abundant in a *wet* place), *Stilicus fragilis* (one only), *Thiasophila inquilina* and *Amphotis marginata* with *Formica fuliginosa*, *Ocyusa picina* (by cutting rushes), *Quedius truncicola*, *Gyrophœna strictula*, *Homalium salicis* (three, in a hayrick), *Quedius scintillans* (not uncommon in hayricks and elsewhere), *Stenus contractus*, *S. major*, *Monotoma spinicollis*, *brevicollis*, and *quadricollis*, *Atomaria gutta*, *Baris T-album*, *Ceuthorhynchus alliariœ*, *urticœ*, *suturellus* and *cochleariœ*, *Otiorhynchus raucus*, *Metallites* (in abundance on one broom plant, with *Polydrusus confluens*), *Apion punctigerum*, *Tychius pygmœus*, *Cœliodes subrufus*, *Ochthebius bicolon* and *rufimarginatus*, and *Corylophus cassidoides* (common).—H. S. Gorham, Rusper Rectory, Horsham: *May 14th*, 1872.

*Note on blind beetles in bees'-nests.*—Some time ago (Ent. Mo. Mag. vi, p. 89) I recorded the occurrence of *Leptinus* in bees'-nests. I have now to add that another of our indigenous blind species, *Adelops Wollastoni*, was found by me in the same habitat, at Staple, in Kent, last summer. This nest contained in addition a great number of *Cryptophagus setulosus*, and was enveloped in a web formed by a colony of the larvæ of one of the large honey-moths.—Id.

*Hydradephaga near York.*—I have captured the following species at Askham Bog, during the season of 1871, and possess such of them as are marked * in duplicate. *Haliplus obliquus*, **Hydroporus decoratus* (local here), **H. dorsalis*, **H. rufifrons*, *H. xanthopus*, **H. oblongus* (first taken here, I believe, by the Rev. W. Hey: this appears to be the only known British locality for the insect), **H. memnonius*, *H. melanarius* (one only), **H. obscurus*, **H. tristis*, *H. melanocephalus*, **H. Gyllenhalii*, **H. angustatus*, **H. umbrosus*, **H. neglectus* (two specimens here, and about fifty at Stockton Common: these appear to be the only recorded captures in this country of this species since it was first discovered by Dr. Power), **H. Scalesianus* (apparently confined to the York district, where it was first taken by Mr. Hey), **H. vittula*, **H. granulatus* (also **H. reticulatus*, from the river Foss), **Colymbetes exoletus* (common), *C. bistriatus* (a few), **C. Grapii*, **Agabus agilis*, **A. abbreviatus*, **A. femoralis*, **A. Sturmii*, *A. dispar* (a few), **A. congener*, **A. didymus*, **A. chalconotus*, *Dytiscus punctulatus*, and **Hydaticus transversalis* (in plenty).

In the *Philhydrida*, *Heterocerus femoralis*, **Berosus signaticollis* (in abundance), and **Cyclonotum orbiculare*.—H. Hutchinson, 21, St. Anne's Street, Cemetery Road, York: *April*, 1872.

*Note on capture of Agriotes sordidus.*—I have, during the past winter, taken a ♂ example of *Agriotes sordidus*, Ill. (recorded as British on the authority of a single specimen taken long ago by Mr. Wollaston, at Southend), out of flood-refuse, on the banks of the Thames at Hampton; and, on looking over some unexamined *Agriotes* in my collection, I find I have two more, a ♂ and ♀, taken in flood-refuse on the banks of the Medway, near Chatham, in April, 1871. My insects are almost of the same size and build as *A. obscurus*, from which they differ in the more slender joints of their antennæ, and their more shining thorax, &c.; being in fact allied to *A. sputator*, from which they differ (apart from their larger size and flatter appearance) in having the sides of the thorax more evidently contracted in front, and the upper surface more closely (the interstices of the elytra especially more finely) punctured, and very evenly pubescent.—G. C. CHAMPION, 274, Walworth Road, S.: *May*, 1872.

*Note on the occurrence of Chalcididous larvæ in the imago of Cynips.*—Last summer, a correspondent sent me a mass of succulent root galls, on opening a few of which, I found inside the large apterous *Cynips* in the perfect state.

In a spirit of carelessness and indifference, I placed the remainder in a pill-box, and did not examine them until recently, when I found all the *Cynips* dead, some out of the cells, and some remaining in them. With some of the latter, whose remains were rather mutilated, was, in each case, a Chalcididous larva, still alive, but in a dying condition, from the dry state in which the insects had been kept. These had evidently fed within the *Cynips after* its arrival at the perfect state; but all Chalcididous larvæ previously found by me associated with *Cynips*, have left their hosts whilst the latter were still in the larval condition.—T. ALGERNON CHAPMAN, Hereford: *April*, 1872.

*Note on the habit of Acanthosoma griseum.*—I had again the pleasure of watching the proceedings of the materfamilias of this species last summer, and now send some dates to assist Hemipterists proper in looking for a similar sight.

On June 4th, 1871, I noticed a female *A. griseum* on my birch tree; she remained near the same part of the tree till the 6th, on which day I found her laying eggs; over these she brooded without moving till the 29th, when the young bugs were hatched; on July 9th they moulted, and, on the 13th, began to move off their native leaf; I now sent them to Mr. Douglas—but the same ill luck which attended the brood of 1870 pursued this second family also.—J. HELLINS, Exeter: *May 3rd*, 1872.

*Thrips soiling framed engravings.*—While recently staying at a quiet old-fashioned inn nestling among the pleasant Surrey hills, I amused myself by inspecting the motley array of engravings on the walls of the parlour, and, to my astonishment, found that these rural treasures of art were speckled all over with countless numbers of a black *Thrips*, which had got between the paper and the glass, and had perished there in every imaginable posture, a discoloured spot surrounding each individual. I cast my eyes about for other traces of this visitation, but failed to detect any. In size, this *Thrips* varied between two and three millimetres in length, but I believe only one species was represented. I regret to be unable to give its trivial name, but my colleagues will understand that, like a bishop "*in partibus*," I abstained from making known my vocation; and, therefore, did not like to ask to have one of the frames taken to pieces to obtain specimens.

In the "Stettiner ent. Zeitung," 1870, p. 325 *et seq.*, Herr Cornelius has given several instances of this kind as occurring in Germany (Bonn, Grevenbroich, Dortmund). His description of the insects would well apply to those I saw. According to his statement, the insect stands near *Thrips longipennis*, Brm., and is the same as the one met with in swarms late in summer, and annoying to man by tickling faces and hands, &c. The author explains their appearance in pictures by their habitually seeking shelter for the night in country houses, and their endeavour to stow themselves away at the end of the better season. There may be some truth in this, but why do they select transparent hiding places, thus defeating the probability of security? We know that they are most active in the bright sunshine: are they such lovers of light, that even their generally inefficient shelter from the winter's cold must be exposed to the broad daylight? or why this marked preference for transparent cover?—ALBERT MÜLLER, South Norwood, S.E.: *March 22nd*, 1872.

*On the forms of Zygæna trifolii.*—Mr. Briggs' paper on the existence in England of two forms (species?) of this insect (Trans. Ent. Soc., 1871, pp. 417—440) has been the subject of discussion at the meeting of the Belgian Entomological Society, held on the 6th of April last. In the *Compte-rendu* of that meeting (No. 73) Baron De Selys-Lonchamps gives an abstracted analysis of the paper, and concludes with the following remarks:—

"In examining 40 individuals of *Z. trifolii* in my collection (and in making a "provisional separation of the two forms noticed by Mr. Briggs), I find that the five "red spots present five principal variations, and that this results from the manner in "which the two median spots are modified, according to whether they are separate, "united into one, confluent with the terminal spot, with the basal spots, or with "both terminal and basal."

He goes on to say, that the disposition of the varieties and their synonymy, according to Belgian specimens, somewhat modifies the arrangement as given in Staudinger's catalogue, and enumerates the forms as under:—

*a.* (Type) *trifolii*, Esper (partim), 34, fig. 5; Hübner, 135.

The median spots united, isolated from the terminal and basal spots.

*b.* Aberration *orobi*, Hübner, 133.

The two median spots separated.

*c.* Aberration *glycirrhizæ*, Hübner, 138; Freyer, 164, fig. 3.

The two median spots united, and confluent with the terminal.

*d.* Aberration *minoides*, Selys (1845); *confluens*, Staudinger (1871); *trifolii*, partim, Esper, 34, fig. 4; *achilleæ*, Hübner (*nec* Esper), 165.

All the spots united into a band. *Filipendulæ*, Hübner, 166, is a sub-variety, in which the band is less perfect, and forms a passage towards the aberration *glycirrhizæ*.

*e.* Aberration *basalis*, Selys (1872); *trifolii* (partim), Hübner, 134.

The median spots united and confluent with the basal. This last is less common than the others; none of them are constant, but pass from one to the other.

—EDS.

*Natural History of Agrotis cursoria.*—This is one of the many species I owe to the kindness of Mr. C. G. Barrett, since he has turned his attention to the insect fauna of the coast of Norfolk.

On September 4th, 1869, he sent me a dozen moths (mostly females) alive; and in the course of a week some of them laid batches of eggs in little clustered groups of about forty or fifty, and also a few single ones scattered amongst the sand in their prison. These eggs I soon after conveyed to what seemed a promising spot for a future colony at a sand-hill on the coast, with the intention of looking after their larval produce in the following summer; but my friend spared me all that trouble by sending me a number of the larvæ, in different stages of growth, on June 11th, 1870, and a further supply on the 20th; these all fed well on *Arenaria peploides*, *Viola Curtisii*, *Triticum junceum*, &c., and became full fed towards the end of June, when they burrowed deep into the sand for pupation, and the perfect insects made their appearance from the 1st to the 12th of August.

The egg of *cursoria* is rather small in proportion to the size of the moth, nearly globular, flattened a little at the base, very finely ribbed and reticulated, and of a flesh colour.

The larva when young is long and slender for an *Agrotis*; but, as it approaches half growth, it becomes of tolerably stout proportions, and, when full grown, is very decidedly plump. Its form is cylindrical, tapering a little at the first three segments, the head being the smallest, though full and rounded in outline, it tapers also on the two hinder segments; the segmental divisions and sub-dividing wrinkles are very well defined.

The colouring varies according to its size, but the head and the plate on the second segment are invariably of a pale brownish-buff tint; the general colouring of the body, up to more than half-growth, is a lively glaucous-green on the back, and rather bluish or greenish-grey on the sides, with the following details: the dorsal line is bluish-grey, outlined with dark greenish-grey; the sub-dorsal line is of a pale or whitish-grey, edged above with a strongly contrasting dark greenish-grey line; midway between this and the spiracles, on the greenish-grey, rather transparent, ground colour of the side, there runs another line of pale whitish-grey, but undulating and interrupted in character; beneath this again, as far as the spiracles, the ground colour is darker; then follows a broad stripe of greyish-white, having a fine, dark grey line running through it, the skin in this region being rather rugose: the belly and legs are rather pale greenish-grey; the spiracles are black, and the tubercular dots dark brown; the head and plate behind it are highly polished, and the rest of the body smooth skinned and shining.

Soon after this period of half-growth, the larva comes to be parti-coloured for a time, the front segments remain green, whilst a patch of ochreous tinges the back of the hinder segments; by and by, this by degrees spreads below, and extends gradually forwards, keeping pace with the growth of the larva until it has attained its full size, when the whole of the body is of the same buff colour as the head, relieved by the whitish-grey lines before described, which are edged with short streaks of darkish grey just at the beginning of each segment; the tubercular dark brown dots are now very conspicuous.

The shape of the pupa is like that of many of its congeners, moderately stout, smooth, and rather shining, and of a pale golden-brown colour.—WILLIAM BUCKLER, Emsworth: *May*, 1872.

*Description of the larva of Nola strigula.*—I am indebted to the unvarying kindness of Mr. W. H. Harwood, of Colchester, for valuable information concerning the habits of this pretty species, and for opportunities of studying and describing its larva, examples of which I received from him on June 15th, 1869, and on June 8th, 1871.

These larvæ fed on oak, principally on the under cuticle of the leaves, and when full-fed, spun up in small boat-shaped cocoons of silk, about $\frac{5}{16}$ inch in length, assimilating perfectly in colour to the surrounding surface of the bark on which they were constructed,—a circumstance which rendered their detection very difficult After the escape of the moths, which took place sometime about the middle of July, the cocoons still retained their form and appearance.

For the sake of close examination, one individual was kept without bark until too late for its spinning a perfect cocoon, and at last it attached itself to the underside of a leaf by the tail amongst a few threads, and there pupated much after the manner of an *Ephyra.*

The full-grown larva is but little more than three-eighths of an inch in length, its body is rather stout in proportion, thickest at the third and fourth segments, and tapered a little from the seventh to the anal extremity; the head is full and rounded, but of less bulk than the second segment; the body is rounded on the back and sides, and rather flattened beneath; it has three longitudinal rows of prominent wart-like tubercles on each side, *i. e.*, six on each segment, bearing fascicles of radiating hairs; it has fourteen legs, the first ventral pair situated at the eighth segment.

The colour of the body is pale buff, sometimes partaking of a flesh tint; the dorsal stripe is yellowish or whitish flesh colour, very broad, and well-defined by a fine border line of brownish-grey; the sub-dorsal line is brownish-grey, but interrupted at the segmental divisions; all the tubercles are broadly ringed with this colour; a conspicuous blackish-grey blotch covers the back of the seventh segment, and extends from one sub-dorsal line to the other; there are indications of other blotches of the same colour on the tenth and eleventh segments, but these are cut in twain by the broad, clear, pale dorsal stripe travelling through and separating them into a narrow dark mark on each side of the back; the sides are flesh colour, the spiracles are entirely hidden from observation by the numerous hairs which diverge near them from the tubercles; the ventral surface is pale flesh colour and naked; the head blackish-grey, the lobes narrowly margined in front with pale flesh colour; the hairs of the tubercles on the anterior segments are pale brown mixed with a few of dark grey, and some few of them in front of the second segment, and especially on the third, are very long; the tubercles on the rest of the body are furnished with hairs of a paler yellowish colour; on the back of the anterior part of the anal segment, issuing from each side, are a few hairs of extra length, which converge and taper on each side to a fine point directed outwards in a slightly downward curve, so that these two fine points of hair resemble a forked tail.

The pupa is four lines long, including the cast larva skin adhering to its tail; it is not very stout, of ordinary shape, though the wing-cases are long in proportion; these last are reddish-brown in colour, the other parts very dark brown and without much polish.—Id.

*Description of the larva of Eupithecia subciliata.*—In the month of August, 1871, Mr. Sang, of Darlington, kindly sent me two living females of *Eup. subciliata.* One of them was "in articulo mortis" when they arrived, the other, which was very lively, I placed under a large bell-glass with some sprigs of maple (*Acer campestre*) in a vial of water.

In about a week's time, I found she had deposited about twenty eggs at the junction of the footstalk of the leaf with the stem; some were laid upon the next year's bud, others upon the sheath-like covering of the footstalk. They were all carefully pushed in and concealed from view, and could only be discovered by pulling off the old leaf. They were at first whitish in colour, but turned red in a few days.

During the first week in April, thirteen young larvæ hatched out, and, for a few days, fed well on the young leaves of the maple; but, before the end of the month, with one exception, the whole brood died off. I have no doubt that the cold, changeable, ungenial weather was too much for their delicate frames.

The sole survivor has, I am happy to say, arrived at a healthy maturity, and, after taking the description which I append, I have forwarded it to Mr. Buckler, of Emsworth, who has promised to take its likeness in his usual life-like manner.

"Short, of uniform bulk. Rests with the head slightly incurved. Ground colour pale yellowish-green. Central dorsal line dark green, somewhat elliptically enlarged at the centre of each segmental division. On each segment, on either side of the dorsal line, a small, dark green spot. Sub-dorsal and spiracular lines yellowish-white, waved, and indistinct. Belly without markings. Segmental divisions yellowish. Tip of dorsal caudal segment whitish. Whole body more or less translucent, and sparsely strewed with short, whitish hairs.

"Hatched first week in April; full-fed first week in May."

I hope some one will send me eggs of *E. pygmæata* and *togata* this year. *E. pernotata*, *egenata*, and *affinitata* (whatever this may be) will then be the only British species of the genus of which the larvæ are not known to me.—H. Harpur-Crewe, Drayton-Beauchamp Rectory, Tring: *May 3rd*, 1872.

[Our remarks concerning *E. subciliata* in the May No. (*vide* Vol. viii, p. 290) were evidently prophetic, though we were scarcely prepared for so rapid a fulfilment of the prophecy.—Eds.].

*Description of the larva of Tephrosia consonaria.*—On May 15th, 1871, I received from Mr. H. W. Marsden, of Gloucester, a few eggs of this species; they were oval, and in colour dull reddish-purple. In a fortnight, the young yellowish-green larvæ emerged, and took readily to oak and birch. By June 23rd, a length of about five-eighths of an inch had been attained, and the general colour was dark brown, with a broad yellow double medio-dorsal stripe; the head paler brown than the ground. On July 25th, they were full-fed, and may be described as follows:—

Length, nearly 1¼ inches, and very slender in proportion; head a little wider than the second segment, globular, rather flattened on the face, and very slightly notched on the crown. Body nearly cylindrical, but slightly flattened on the dorsal, and still more so on the ventral, surface. The segments overlap each other, and thus render the divisions conspicuous. The usual dots slightly raised, and on the twelfth segment appear as two slight humps; the skin has a wrinkled appearance.

The ground colour varies in different specimens from yellowish-green to yellowish-brown; head pale, thickly mottled with light or dark brown, according to the shade of the ground of the body. A dark green pulsating vessel, bordered on each side with yellowish-green, forms the medio-dorsal stripe; there are no perceptible sub-dorsal or spiracular lines. The spiracles are white, encircled with black; the slight humps on the twelfth segment black. The ventral surface is yellow, tinged with green; legs and prolegs brownish.—Geo. T. Porritt, Huddersfield: *May 16th*, 1872.

*Aspidisca bred from poplar leaves.*—On the 4th April, I began to breed the *Aspidisca* from the cases formed in the leaves of poplars (see figure on cover of Ent. Annual, 1872), which Lord Walsingham collected last autumn, near Fort Klamath. in Oregon. I have now bred forty specimens, and hope to breed many more. It so closely resembles the *Aspidisca* which feeds on the leaves of *Cratægus tomentosa* (*splendoriferella*, Clemens), that I do not at present see how it is to be distinguished from that species.

At a first glance, one might almost fancy the insect was *Cemiostoma scitella;* the basal half of the anterior wings is of the same leaden-grey colour, and the apical half is tawny, varied with black and white, with a black line projecting in the cilia at the apex; but the absence of eye-caps, the thicker antennæ, and more glossy head, shew at once it is no *Cemiostoma*, and the insect has the same curious way of tumbling about on its head which we notice in *Heliozela sericiella* when in the net; and, clearly, from the habit of the larva, the relationship ought to be rather with *Heliozela* and *Antispila*.—H. T. Stainton, Mountsfield, Lewisham: *May* 17*th*, 1872.

*On the Lepidoptera of the "Breck"-sand, Norfolk.*—During last season, I had several opportunities of collecting on the celebrated "Breck"-sand of the Thetford and Brandon district, and venture to offer some notes thereupon.

The first visit was in the middle of June when most of the special Brandon insects are generally out, but from the backward season they did not appear so freely as usual. *Heliothis dipsacea* flew in the sunshine about the flowers of *Lycopsis arvensis*, an occasional *Agrophila sulphuralis* was disturbed from among nettles or *Convolvulus*, *Spilodes sticticalis* flew up here and there from its favourite hiding place—the bare ground, and a worn out *Aspilates citraria* seemed to show that one interesting species was already over. Later in the afternoon, a few *Acidalia rubricata* turned up, and two or three *Oxyptilus lætus*. *Tortrices* were scarce, two or three *Dicrorampha plumbagana*, with *Eupæcilia atricapitana* and *anthemidana*, being the principal. The best haul of the day was at sunset, when I "happened upon" a favourite spot for *Tinea imella*, exactly at its time of flight, and secured a good number. *Douglasia ocnerostomella* and *Coleophora onosmella* were on the wing at the same time, and *Gelechia marmorea* was already out. At dusk, *Dianthœcia carpophaga* flew about the flowers of *Lychnis vespertina*, and *Silene conica* at its usual reckless pace; and a careful search after dark among *Sisymbrium sophia* and *cheiranthoides*, and on the patches of cultivated sainfoin (*Onobrychris sativa*), produced a few *Lithostege griseata;* but a miserable, cold fog came on and put a stop to collecting.

Later in the month, my friend, the Rev. E. N. Bloomfield, being in the neighbourhood, we arranged a trip together, but, as usual in pre-arranged excursions, the weather was most unpropitious, and finally, just when our best time for collecting ought to have come on, the rain came down in such style as completely settled the matter. A hard afternoon's work had produced but two or three each of *Agrophila* *sulphuralis*, *Spilodes sticticalis*, and *Oxyptilus lætus*; but *Platytes cerussellus* swarmed among short grass (the females requiring to be searched for at its roots). *Coleophora annulatella* was pretty common among *Chenopodium*, and *Ocnerostoma piniariella* among fir; and single specimens of *Gelechia distinctella* and *Elachista paludum* occurred.

Being busily engaged elsewhere, a month passed before the next visit, which was also in the company of the Rev. E. N. Bloomfield. This time the elements played us a different trick, for a gale arose, and blew with such fury, that we must have had a blank day, had we not, fortunately, hit upon a sheltered park fence, overhung by firs, larches, &c., and here we compensated ourselves. *Eudorea cratægalis* literally swarmed, and we each obtained a fine series of the scarce and little known *Spilonota laricіana*. *Aventia flexula* also occurred, with *Acidalia inornata*, *Eupithecia lariciata* (worn), *Dichelia Grotiana*, and *Stephensia Brunnichella*. While I kept to the fence, Mr. Bloomfield went into the fields to look for larvæ of *Lithostege griseata*, but with little success. Plenty of *Sisymbrium* was searched and swept, but very few larvæ were found. Previously, we had wearied ourselves by an unsuccessful hunt for larvæ of *Agrophila sulphuralis* and *Oxyptilus lætus*, the only result being that, from among the low plants, along with swarms of *Gelechia desertella*, we disturbed a few *G. pictella*.

We also had a search for larvæ or pupæ of *Eupæcilia anthemidana* in the seed heads of *Erigeron acre*, and obtained three pupæ. Probably we should have obtained a fair number, but that some one had been before us and cut the centre flower of nearly every plant, that being the only blossom which was forward enough to receive the egg at the time of the first brood. Certainly, hundreds of plants had been cut. If *anthemidana* be not exterminated in that locality, it will not be the fault of this industrious collector.

The larva eats out the seeds of the *Erigeron*, one flower, apparently, serving it for its whole life, and spins up within the pappus, leaving very little evidence of its operations.

When the wind abated, we found *Gelechia dodecella* common, and *Batrachedra pinicolella* not scarce, among the young fir trees; and, as it got dark, we met with *Crambus falsellus* and *pinetellus*, and *Anerastia lotella*, while *Homœosoma eluviella* and *nebulella* were on the thistle blossoms, *Hadena chenopodii* and *Agrotis aquilina* flying among *Silene*, and *Agrotis tritici*, *Caradrina blanda*, and other common *Noctuæ*, as common on the rag-wort flowers as though they were still at the sea-side, or had received the habit as a tradition in uninterrupted succession from their remote ancestors of the Post-glacial era, when the "Breck"-sand was a range of coast sand-hills. At lamps, when returning, we found a curious red *Clisiocampa neustria* (not a common species, apparently, in Norfolk), with *Oncocera ahenella* and *Acidalia immutata*.

Being anxious to obtain some more *Spilonota laricіana*, I went again in the beginning of August, but the fence was deserted, and I only succeeded in beating a single specimen from the young firs. Apparently, the scarcity of this insect in collections arises from the difficulty of disturbing it from its haunts in the larch trees. On this occasion but little was to be found in the day time. *Eudorea cratægalis* was still abundant on tree trunks, but getting worn; *E. truncicolella* just coming out. Some aspen trunks were alive with *Gelechia populella* and *marmorea*, and *Batrachedra præangusta;* and *Thecla quercûs* had been tempted from his high estate by the abundant blossoms of *Knautia arvensis*. Towards sunset, specimens of the second broods of *Acidalia rubricata* and *Oxyptilus lætus* appeared, with plenty of *Catoptria citrana* (frequenting *Achillea millefolium*), and a very fine and beautiful *Oncocera ahenella*. At dusk, I wandered on to a heath where the whistling of the stone curlews sounded wild and shrill. Here, among the young fir trees, *Lithosia complana* made its appearance, and quite a little swarm of them hovered round one low bush in which a ♀ was concealed. Near by, on some broken ground, thistles were blooming in abundance, and on them, with *Lithosia complana*, were *Homœosoma eluviella* and *nebulella*. But the greatest attraction was the abundance of blooming scabious (*Knautia arvensis*). On it, after dark, was *complana* again, with various *Noctuæ*, and several specimens of the scarce *Pempelia abietella*.

One day, a week later, was the grandest of the season. The heat was simply intense, and insects felt it. There was no difficulty in stirring them up, but to keep them in sight was not so easy. *Noctuæ—Agrotis valligera* and *tritici*, *Hadena chenopodii*, &c., excited by the hot sun, and unable to remain in their hiding places, were tearing about from flower to flower, while the pretty little *Acontia luctuosa*, quite in its element, was taking matters more easily. *Aspilates citraria* (second brood) and worn *Catoptria citrana* tumbled out in every direction, *Oxyptilus lætus* and *Spilodes sticticalis* were almost common, and *Acidalia rubricata* nearly wild with the heat. They were gone like a flash. One specimen had to be turned out of its favourite patch of weeds three different times before it would submit to be caught. It became necessary to hide my bag in the cool shade of thick bushes, and not to keep my captures long in my pocket, lest they should get roasted. By keeping them cool, however, I saved many a specimen that would otherwise have got beaten to fragments.

As evening advanced, insects became more composed, and more easily captured. *Sericoris cespitana* appeared pretty commonly, and with it *Coleophora saturatella* and *inflatæ*. As soon as it was dark, the scabious flowers became again the attraction. *Lithosia complana* common, but worn, *Eudorea truncicolella* also common, *Macaria liturata*, and a few more *Pempelia abietella*,—all upon them till the moon came out brightly from behind the firs and drove them away. Several specimens of *Gelechia distinctella* were also taken, flying over these flowers, and even a dissipated *Acontia luctuosa*, sipping the sweets at 10 p.m. Returning home, a lovely specimen of *Eupœcilia Degreyana* waited for me on a gas lamp.

A fortnight later, I made my last visit for the season. Most of the species last named were still out, but worn; even *Gelechia desertella* and *marmorea* were not over, and I met with *Crambus latistrius* and *Trifurcula immundella;* and at the lamps, at night, found *Paraponyx stratiotalis*, *Tinea imella* (second brood), *Elachista cerussella*, and *Opostega salaciella;* but the noticeable circumstance of the day was that *Agrotis valligera* was actually swarming, both by day and night, on the scabious flowers, accompanied by abundance of *A. tritici* (not the *dull brown tritici* of other inland districts, but the dark, variable, and richly coloured *tritici* of the coast sand-hills), but of their constant *coast* companion, *Agrotis cursoria*, not one single specimen could be found, nor can I ascertain that it has ever been seen in that district.

I did not notice when collecting that the *Lithosia complana* found so commonly were not precisely like those of the south of England, but slightly smaller, with rather straighter costa, and in some specimens a decided increase of the leaden colour on the hind-wings—intermediate specimens, in fact, as I believe between *complana* and *molybdeola* of Guenée. Taking into consideration the fact that Lord Walsingham took, three or four years ago, specimens in the west of Norfolk much more closely resembling the typical *molybdeola* from Lancashire, I am compelled to the belief that it is merely a variety or race of *complana*. I give my opinion, however, for what it is worth, since my friend Mr. Doubleday holds a different view, and considers my specimens to be true *molybdeola*, and not *complana*; while the interesting notice of the larvæ by the Rev. J. Hellins (E. M. M., vol. viii, p. 174) is also clearly against me.—Charles G. Barrett, Norwich: *13th May*, 1872.

*Notes on the Lepidoptera of the Lancashire and Cheshire sand-hills.*—On the 15th inst. I returned home from a four days' collecting excursion, in company with the Revs. J. W. and T. H. Daltry, of Madeley, to the sand-hills of the Lancashire and Cheshire coast. With the exception of the first evening, the weather was everything that could be desired, and we found the dwarf sand sallows in full golden bloom, a sight long to be remembered. The pretty sand lizards (*Lacerta agilis*) were darting about in the sun, whilst all the pools were alive, day and night, with the not unmusical croaking of hundreds of the peculiar and curious natterjack toad. In *Lepidoptera* we worked specially for *Tæniocampa opima*, and, in three nights, secured 106 specimens. Many of them were taken at the sallow bloom, but still more at rest, and a great many were depositing their eggs, which we found not only on *Rosa spinosissima*, which is said to be the food-plant, but on sallow, on old withered shoots of ragwort and hounds-tongue, and even on the marram or sand grass. This would give rise to a suspicion that the larva is a general feeder. When first laid, the eggs, being pale yellow, are very conspicuous, even at a considerable distance; but they soon change to purplish-brown, and are then much less distinct. The species seemed very local, and, perhaps, had it not been for the kindness of Mr. William Greasley, of Wallasey, a local Lepidopterist, we might have missed it. Amongst the other species taken were *T. gracilis* and *rubricosa*, *Gonoptera libatrix*, *Eupithecia pumilata*, *Nyssia zonaria*, *Anticlea badiata*, &c. Of larvæ, *Orgyia fascelina* was plentiful; of *Bombyx quercûs* and *rubi*, a few were picked up, the latter spinning up; a few young *Satyrus Semele* on the marram grass; and under the sand amongst the same plant, those of *Leucania littoralis*; of *Epunda lichenea*, about 30 were found on the common *Sedum*; whilst hibernating *Liparis salicis* were obtained from the crevices of a row of palings, along which were a lot of willow bushes.—George T. Porritt, Huddersfield: *April 15th*, 1872.

*Captures during the month of March.*—The following are some of my best captures during the month of March, and are, I think, unusually early. *Ocnerostoma pinariella*, 4th; *Andrena bicolor* and *æstiva*, 5th; *Tæniocampa miniosa*, 7th; *Heusimene fimbriana*, 11th; *Eriogaster lanestris*, 15th; *Necrophorus humator*, 25th; *Cucullia verbasci*, bred, 28th.—C. W. Dale, Glanvilles Wootton: 10th April, 1872.

# Reviews.

THE MICROGRAPHIC DICTIONARY, 3rd edition, edited by J. W. GRIFFITH, the Rev. M. J. BERKELEY, and T. RUPERT JONES. London: JOHN VAN VOORST.

At p. 167 of vol. viii we had occasion to notice the first two parts of the new edition of this work. The succeeding parts up to pt. vii, commencing the letter C, are now before us. To all of our readers who possess a microscope we heartily recommend this Dictionary, which is a perfect mine of information on every subject connected with microscopic research, illustrated by many beautifully executed plates of crowded figures, and by wood-cuts without end. The entomological portion is carefully compiled, though perhaps scarcely brought sufficiently down to the present date. The article "*Chalcididæ,*" selected by us at random, is a good example of the manner in which exceedingly useful information may be condensed into small space. Possibly the Bibliographical references are not always so complete as might be desired; but, at any rate, they are sufficient to enable the student to know where to look for more extended information than could possibly be furnished by a Dictionary. In the article "*Arachnida*" we notice a curious error in bibliography. Among the books quoted is "Walker, British Spiders (Ray Society)." We could readily have believed that Mr. Walker had written such a work, but the facts oppose the supposition, and there is evidently no confusion with the elaborate Monograph by Mr. Blackwall, published by the Ray Society, for this is noticed in its proper place; how the error can have originated is a problem we will not attempt to solve.

DIE PFLANZEN FEINDE AUS DER CLASSE DER INSECTEN. VON J. H. KALTENBACH. I. ABTHEILUNG. Stuttgart: JULIUS HOFFMANN. 1872.

Sixteen years have elapsed since there first appeared in the "Verhandlungen des naturhistorischen Vereines der preussischen Rheinlande und Westphalens" a paper by J. H. Kaltenbach entitled "Die deutschen Phytophagen aus der Klasse der Insekten, oder Versuch einer Zusammenstellung der auf Deutschlands Pflanzen beobachteten Bewohner und ihrer Feinde," in which, under the successive genera of plants, arranged alphabetically, were enumerated the various insects of all orders by which they were infested. This first paper, extending to 100 pages, treated only of the genera commencing with the letter A; in 1858 appeared the letter B; in 1859, C; in 1860, D, E, F; in 1862 G, H, J, K, L; in 1864, M, N, O, P; in 1866, Q, R.

Necessarily, the work is, to a great extent, a compilation; and, as its materials are collected from a variety of sources, all are not equally trustworthy; but, quite independently of the compilations from other entomological publications, there is a mass of notes from Herr Kaltenbach's own observations, and other valuable information is extracted from the letters he had received from his numerous correspondents.

The periodical (published at Bonn) in which these papers appeared has but a very limited circulation in this country, and hence it has happened that the labours of Herr Kaltenbach had been continued from some time without attracting much attention. Micro-Lepidopterists will not easily forget the sensation produced in the year 1861 by the discovery of the larvæ of the genus *Micropteryx*, and by our finding, moreover, that these larvæ, which every Micro-Lepidopterist had been throwing away for years, under the idea that they were Coleopterous, had actually been described by Kaltenbach, and correctly referred to the genus *Micropteryx*, under *Corylus*, which was published in 1859.

It was then seen that he who studied the vegetable feeders of all orders conferred a great boon on specialists; for that larvæ neglected by them, as not apparently belonging to their group of insects, might really belong thereto: and Kaltenbach's papers have since then been eagerly studied by all who had access to them.

In 1867, a French translation of Kaltenbach's papers was commenced in a Belgian publication, "Archives Cosmologiques," but we do not know how far this has progressed, having only seen the letter B.

In the same year, a proposition was made to the Ray Society by one of the Editors of this Magazine for an English translation of Kaltenbach's Memoirs, to be brought out collectively in one volume, under the auspices of that Society, which the Council decided to accept; as, however, many years must elapse (from the numerous engagements of the Ray Society) before this translation can possibly appear, we were very glad to learn some months ago that Herr Kaltenbach had resolved to issue a collected edition of his scattered papers in German.

Of this, the first portion, extending to 288 pages (8vo), is now before us, and to all Entomologists who are masters of the German language will prove a great boon. In bringing out this new edition, however, the author has entirely recast the work; it is no longer an alphabetical arrangement of the genera, but the arrangement is according to the sequence of the natural orders of plants, and it is illustrated with numerous wood-cuts of the plants.

Commencing with the *Ranunculaceæ*, we have the *Berberidæ*, the *Nymphæaceæ*, the *Papaveraceæ*, the *Fumariaceæ*, the *Cruciferæ*, the *Resedaceæ*, the *Cistineæ*, the *Violareæ*, the *Polygalaceæ*, the *Caryophyllaceæ*, the *Tamaricineæ*, the *Hypericineæ*, the *Linaceæ*, the *Malvaceæ*, the *Tiliaceæ*, the *Geraniaceæ*, the *Rutaceæ*, the *Sapindaceæ*, the *Ampelideæ*, the *Terebinthaceæ*, the *Rhamnaceæ*, the *Papilionaceæ*, the *Rosaceæ*, the *Onagraceæ*, the *Lythrareæ*, the *Cucurbitaceæ*, the *Crassulaceæ*, the *Ribesiaceæ*, the *Saxifragæ*, and the *Umbelliferæ*, which are only partially included in the part before us.

There is no doubt that this edition is a vast improvement on the original one and the subsequent French translation; and it may now, indeed, be a matter for consideration with the Ray Society whether the proposed English translation, for which illustrated wood-cuts, as in the new German edition, had never been contemplated, will really be needed.

## Obituary.

*George Robert Gray, F.R.S., &c.*—Visitors to the Officers' studies in the Zoological department of the British Museum will no longer have their dry researches enlivened by the cheerful chat and amiable jests of the courteous assistant-keeper; who, though *par excellence* an Ornithologist, had always a regard for Entomology and its students, and whose writings (nearly a score in number) upon insects of various orders entitle him to more than honorable mention here. Although not precisely the first in date of his entomological publications, the descriptions of new genera and species of insects by him in Griffiths' edition of Cuvier's Animal Kingdom, 1832 (Vols. xiv and xv), are perhaps best known to English readers, though scarcely written in orthodox scientific fashion. The *Phasmidæ*, especially those of Australia, received considerable attention from him (including a monograph of the typical genus), and two, at least, of the well-known Museum Catalogues of *Lepidoptera* (*Papilionidæ*) are his work: we may also mention a more interesting and now rare volume from his pen, viz., Notices of Insects that form the bases of fungoid parasites.

Mr. Gray was the son of Mr. Samuel F. Gray, himself a writer on various branches of natural science: he was born at Little Chelsea, near London, on the 8th July, 1808, and was educated at the Merchant Tailors' School. Having become acquainted with that well-known naturalist, Mr. J. G. Children, whose cabinet of insects he arranged, Mr. Gray was, in 1831, appointed, through that gentleman's influence, an assistant in the British Museum, in which Institution he remained until his death, having risen through the usual grades to the position of assistant-keeper under his brother, Dr. J. E. Gray, and having become a member of various scientific societies, culminating in the Royal Society. After a sudden and short illness, during which he was insensible for quite a week, Mr. Gray died from paralysis of the brain on the night of Monday, the 6th ult. He leaves a widow, but no issue.

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ENTOMOLOGICAL SOCIETY OF LONDON, *6th May*, 1872.—H. T. STAINTON, Esq., F.R.S., Vice-President, in the Chair.

Lieut. H. Murray, 104th Fusiliers, was elected a Member, and J. E. Mason, Esq., of Alford, a Subscriber.

Mr. E. Saunders exhibited a series of species of Australian *Buprestidæ*, illustrating the sexual differences existing in insects of that group.

Mr. F. Smith exhibited a large collection of *Hymenoptera*, chiefly *Aculeata*, sent from Japan by Mr. G. Lewis. Several of them appeared to be identical with British species, and the genera were all represented in Europe, save one genus of ants. There were also six species of *Tenthredinidæ* pertaining to the genus *Hylotoma*, and a species of *Sirex* closely allied to *S. gigas*, but apparently differing in the constricted base of the abdomen.

Mr. Verrall exhibited an example of *Syrphus lasiophthalmus* with a peculiar malformation of two of the tibiæ, which appeared as though they had been broken and badly united afterwards. He attributed this to some injury received when the insect had just emerged from the puparium, and when the parts were of soft consistence.

Mr. Stainton exhibited an aspen leaf sent by Lord Walsingham from Oregon (see the cover of the 'Entomologist's Annual' for 1872), pierced by a multitude of small oval holes, caused by mining micro-lepidopterous larvæ of the genus *Aspidisca*, which cut out oval cases when fully fed. He also exhibited living and dead specimens of the moth, which greatly resembled *Cemiostoma scitella*, but differed structually in wanting the eye-caps.

Mr. E. Saunders read 'Descriptions of twenty new species of *Buprestidæ*.'

Mr. H. W. Bates read a Memoir on the Longicorn *Coleoptera* of Chontales, Nicaragua, embodying the results of the researches of Mr. Thomas Belt, in so far as regarded the family under consideration. Mr. Belt's collection contained about 250 species of Longicorns, of which 133 were peculiar to the district. Mr. Bates considered that an analysis of the collection elicited two general facts of much interest: first, the homogeneity of the type of the insect-fauna of the forest region of tropical America, extending probably over 45 degrees of latitude; and, secondly, the existence of a distinct northern element, the metropolis of which is Central America.

# ON THE BRITISH TORTRICES OF THE GENERA *DICRORAMPHA* AND *ENDOPISA*, AS RESTRICTED BY WILKINSON.

### BY CHAS. G. BARRETT.

Although widely separated in Wilkinson's work on the British Tortrices, some of the species in these two genera are so intimately allied in general appearance, that it is useless to attempt to clear up the difficulty which envelopes them, without taking both together. It is hardly necessary to add, that in Mr. Doubleday's list, and in that of Dr. Wocke, in Staudinger's Catalogue, these species are arranged quite differently.

*Dicrorampha Petiverella*, L.—Sufficiently described by Wilkinson. A well known and abundant species.

*D. flavidorsana*, Knaggs.—Described by Dr. Knaggs, E. M. M., January, 1867, and in the Ent. Annual for 1867, where it is also figured. Of this species Professor Zeller writes that—"it is a variety "of *Petiverella*, and flies with it." With great reluctance, I am compelled to agree with him. A careful examination shows no distinctive marking which is not partaken of by *Petiverella*, nor any line which can be satisfactorily drawn between their variations; neither does it show any peculiar habits nor special habitats. The place in which I took the original specimens produced no more, and the other captures seem to be equally casual.

*D. sequana*, Hüb.—A very distinct species, sufficiently well described.

*D. politana*, Hüb.—This species is sunk into a synonym of *alpinana*, Tr., by Dr. Wocke, in Staud. Cat.,—not even recorded as a variety. Prof. Zeller suggests that both may be only forms of *Petiverella;* he says—"they all fly together, and are united by insensible "passages." In this country this is not the case, *Petiverella* occurs everywhere, and therefore accompanies the other species in their localities; but *politana* is local, and not to be found in many parts of the country, but swarms wherever it occurs: moreover, its characters are sufficiently distinctive—fore-wings long and narrow, *dorsal blotch very oblique*, much more so than in *Petiverella*, *its anterior margin straight*, consequently appearing to be produced along the dorsal margin of the wing. Costal streaks numerous and very short.

*D. alpinana*, Tr.—Fore-wings much broader than in *politana*, dull olive-brown, costal streaks few and indistinct, dorsal blotch broad, only slightly oblique, with curved anterior margin.

The remaining species may be generally characterized as dark brown, irrorated with yellow scales, having a more or less distinct dorsal blotch, beyond it lustrous lines proceeding from the costal streaks, and a row of black dots before the hind margin.

*D. simpliciana*, Haw. (*caliginosana*, Tr.).—The largest species in the genus, and easily separable by the *breadth of its wings.* Dorsal blotch triangular, with its apex pointing towards the hind margin, divided from base to apex by a dark line, and *anteriorly distinctly dark margined.* Yellow scales large, not abundant. Lustrous lines leaden, broad and distinct, especially in the female, which has but few of the yellow scales.

*D. tanaceti*, Stn. (*saturnana*, Heinemann).—Nearly as large as *simpliciana.* Yellow scales *small, exceedingly abundant*, placed in short lines, and giving the wing a *golden appearance.* Leaden lines narrow and dull. Dorsal blotch *not triangular*, but rather in the form of a head and shoulders, or of a round loaf with a broad base, being *constricted above the middle of the wing.* In the female this is nearly obsolete.

The only British specimens I have seen were from Mr. McLachlan, and were bred by Mr. D'Orville from tansy. These agree with continental specimens of Heinemann's *saturnana.* Zeller says—" It flies " in May among tansy."

Dr. Wocke (in Staud. Cat.) sinks the name *tanaceti* into a synonym of *plumbagana*, Tr., a smaller species, but he gives *saturnana*, Hein., as a distinct species in another sub-genus, and synonymous with another totally distinct species, *saturnana*, Gn., Wilk., Stn.

*D. plumbagana*, Tr.—Smaller, and having narrower fore-wings than the two preceding species, readily recognisable by its *bright* lustrous lines. Yellow scales large, arranged in irregular lines. Blotch *nearly upright, very irregular in form, not triangular, but dilated at the apex*, and divided by two delicate, dark, upright lines. Costal streaks bright silvery, not crossing the wing, *but the pair over the blotch sometimes unite with an irregular silver-edged patch above the anal angle.*

Dr. Wocke (in Staud. Cat.) seems to have got into a serious confusion with regard to this species also: *plumbagana*, Tr., he quotes as a good species (No. 1283), making it, however, synonymous with *tanaceti*, Stn., but *plumbagana* of Wilkinson he quotes (with a ?) as a synonym of the previous species, *distinctana*, Hein., and again afterwards (with another query) as synonymous with *subsequana*, Haw. and

Wood!! Haworth's *subsequana* is now well known to have been *pygmæana*, Hübner (No. 1240 of Wocke); while Wood's *subsequana* is *Pamplusia monticolana* (which is Wocke's No. 1243).

It seems, therefore, not improbable that these three supposed species (Nos. 1282, -3, and -4) may all be referable to *plumbagana*, Treitschke, although some of the synonyms belong elsewhere.

M. Jourdheuille, in his Micro-Lepidopterist's Calendar, states that the larva of this species feeds in roots of *Achillea millefolium.*

*D. senectana*, Gn.—Introduced in Mr. Doubleday's list, but without description. Called by Wilkinson the ♀ of his *saturnana*, from which it is very distinct.

Described by Guenée—"Allied to *ulicana* (*i. e. plumbana*), but "larger and paler, wings of the same form as *caliginosana* (*simpliciana*), "cinereous, irrorated with very numerous yellowish scales, in fact, "almost covered with them, nearly immaculate. The dorsal patch and "marginal spots scarcely visible. Costa with lead-coloured strigulæ. "Posterior wings cinereous. Palpi elongated as in *ulicana*."

This description is excellent. The insect appears to be light brown, from the almost total absence of leaden lines and the abundance of yellow scales. Alar. exp. 7 lines.

Apparently a scarce species in this country. I have seen but two or three specimens, one of which is the type named by Guenée, and kindly lent me by Mr. Doubleday.

*D. herbosana*, n. sp.

♂. Head and antennæ pale brown. Palpi whitish, tip brown. Thorax pale brown. Fore-wings with the costa rather arched and the apex pointed, rich brown, with numerous small bright yellow scales, arranged in short irregular lines, not very close together, but allowing the ground colour to appear. Dorsal blotch triangular, oblique, pointed at the apex, pale brown, *darkly margined on both sides*, and enclosing several faint brown lines on its base. Costal streaks short and indistinct, pale silvery. Above the anal angle, and parallel with the hinder margin of the dorsal blotch, is a long, narrow, irregular space, margined with a silvery line. Two or three of the usual black dots are barely visible at the hind margin. Cilia shining, pale yellowish. Hind-wings whitish, tinged with grey.

♀. Darker, especially on both sides of the ***sharply defined and pointed blotch***, and with fewer yellow scales. Hind-wings brown.

Alar. exp. 7 lines.

Readily distinguished from the allied species by its pointed wings and distinct, oblique, pointed dorsal blotch, in which respects it is closely allied to *acuminatana.*

Five specimens have been kindly entrusted to me by the Rev. H. Burney and by Mr. J. Sang, who takes them on grassy slopes near Darlington. Also taken on a canal bank near Saltwick, Lancashire, by Mr. Hodgkinson.

*D. acuminatana*, Zeller.—Readily distinguished from the last-named species by its purplish tinge, arising from the numerous purple scales arranged in lines over the whole of the fore-wings, and from the other allied species also by its acutely pointed fore-wings and oblique dorsal blotch. In continental examples the ground colour is sometimes very pale, throwing up the purple scales to great advantage.

*D. consortana*, Steph., Wilk.—Wilkinson's description of this species is excellent. It may be distinguished from the allied species by its small size, very few yellow scales on a dark brown ground, numerous black dashes on the fore-wings, especially along the fold, and its very narrow, divided, and sinuated dorsal blotch, which is produced towards the apex of the wing. Costal streaks bright, short, and nearly perpendicular to the margin.

Singularly enough, this species occurs of two different sizes, one nearly as large as the male of *D. acuminatana*, the other much smaller; and so constant are they as to suggest the idea of distinct species, but a careful examination under a good magnifier of males of both forms, seems to detect no other distinctions.

A small continental species, having the dorsal blotch whitish, has been supposed to be identical with this, but I think it not distinct from *agilana*, Tengström, Heinemann. It seems to me in form more closely allied to *sequana* than to *consortana.* I have not as yet seen a British specimen anything like it.

*Endopisa saturnana*, Gn., Wilk.—Wilkinson separates this and the next species from the *Dicroramphæ* on account of the absence of the costal fold in the male. In other respects they are extremely closely allied. This *name* has been usually applied in cabinets, in this country, to the next species, *plumbana* (this being called *ulicana*), but Guenée's and Wilkinson's descriptions, as well as Guenée's labelled types, kindly lent me by Mr. Doubleday, prove this to be an error. They are exceedingly difficult to separate, unless very fine, and this *species* in particular is most difficult to characterize. Its ground colour is brown, but almost entirely concealed by *small pale yellow scales with whitish bases, arranged in short, straight lines,* very close together, and with extreme neatness. *Dorsal blotch hardly visible, in fact, generally obsolete,* and the wing is crossed in succession from near the base to the hind margin, by obscure, silvery-grey, angulated lines, originating in the costal streaks. The three apical streaks, however, unite together near the costa, and do not cross the wing. ♀ very similar, hind-wings rather darker.

Exceedingly local. Taken by Mr. Bond, I believe, on chalk downs, but apparently in very few collections. Prof. Zeller, to whom specimens have been submitted, says it is quite unknown to him.

*E. plumbana*, Scopoli (*ulicana*, Gn., Wilk.).—Fore-wings dark brown. Yellow scales larger, more ochreous, and not arranged so closely or regularly as in *saturnana* (consequently this is a darker insect). Dorsal blotch rather paler than the ground colour, its anterior edge oblique, posterior edge nearly upright. Wing crossed by two or three leaden lines beyond the middle, but sometimes these are nearly obsolete. ♀ darker (iron-grey with an olive tinge), very few yellow scales, but the leaden lines broad and distinct. Costa rounded. Very different to the male.

This is the commonest species of the group, and seems to occur in grassy places almost everywhere. It may even be found flying in the afternoon along grassy banks by road sides.

Dr. Wocke (in Staud. Cat.) correctly sinks *ulicana*, Gn., into a synonym of *plumbana*, Scop. The *Dicrorampha plumbana* recorded as British in the Ent. Annual for 1870, and taken in the north by Mr. Hodgkinson, is merely the female of this species. It is sluggish in its habits, and most easily obtained by sweeping the grass in the afternoon when the male is flying.

From Mr. Wilkinson's remarks after his description of *Endopisa saturnana* (p. 228), it seems evident that he had not even then any clear idea of the species, as distinguished from its allies, and therefore I suspect that his localities for that species and his *ulicana* may not all be reliable. It is, therefore, very desirable that a record should be obtained of the localities in which these and the more obscure *Dicrorampha* are found, so as to get a better idea of their habits and distribution in this country.

The remaining species of the genus *Endopisa* may readily be recognized by their uniform glossy appearance, arising from the absence of the yellow scales and of the dorsal blotch.

*E. roseticolana*, Zeller. (*Germarana*, Wilk., Doubl., *non* Hüb.)—Easily recognizable by its dark purple-brown, almost immaculate fore-wings, and slightly rounded costa. Under a lens the ocellus above the anal angle becomes slightly visible, containing four faint black streaks, and edged behind with blue. The costa, also, has a few distant, faint whitish streaks.

Found among wild rose, the larva feeding in the hips.

The name *Germarana*, Hübner, has been applied by mistake to this species. *Atropurpurana* and *proximana* of Haworth and Stephens, quoted in Mr. Doubleday's list as synonyms, do not seem to refer to it, since the former is described as having *white cilia*, whilst the latter seems to agree best with *pisana*, Gn. Its identity with *roseticolana* is affirmed by Prof. Zeller himself, and his description applies most accurately to it. It is worthy of remark, however, that an allied species with broader wings and costa nearly straight has been sent to Mr. Doubleday by Dr. Staudinger under this name. It is dull, dark, purplish-brown, with a few yellowish scales and white costal streaks. It does not seem to have been found in this country.

Dr. Wocke (in Staud. Cat.) seems to have overlooked Wilkinson's description of this species entirely.

*E. nigricana*, Steph. (*tenebrosana*, Dup., *pisana*, Gn., Doubl., *proximana*, Wilk., *nebritana*, Wilk., Doubl., *non* Treitschke).—The common pea-feeding species, readily known by its glossy fore-wings, brownish or drab with an olive tinge, and the distinct yellow or whitish costal streaks. Specimens of the supposed two species (*nigricana* and *proximana*, Wilk.) having been submitted to Prof. Zeller, he wrote—"That "he considered them to belong to one variable species, *tenebrosana*, " Dup." He also, with his usual kindness, sent specimens of the true *nebritana*, Tr., from Austria, a species which hardly occurs in northern Germany. These are larger and rather darker, and have the third costal gemination produced to the ocellus, where it makes a sudden bend and forms a perpendicular, bright golden line down the inner margin of the ocellus. A similar straight golden line bounds it exteriorly, and the fifth costal streak is not continued to the cilia as in our species.

I can find no evidence to contradict Prof. Zeller's opinion. Wilkinson's descriptions of the larvæ of the two supposed species are practically identical, and Mr. Bond, Mr. Machin, and others, who have taken and bred them, agree with me that they have no reliable point of distinction, both forms being taken together. Mr. Doubleday, however, tells me that he once saw thousands of *pisana* in a field in which peas had been grown the year before, and that there was not one so dark as Haworth's *nigricana* among them; the question may, therefore, still be considered open for further investigation.

One thing, however, is very certain, that so far from being scarce in the perfect state, as Wilkinson affirms, they are exceedingly abundant on the sunny side of hedges adjoining the previous year's pea fields, and at the edges of woods where *Orobus* and other vetches are common.

Dr, Wocke (in Staud. Cat.) sinks *proximana*, Wilk., as a synonym of *tenebrosana*, Dup., making *nigricana*, Steph., and *pisana*, Gn., synonymous with the next species, *nebritana*, Tr. As this is an error, *proximana*, *nigricana*, and *pisana* being all synonymous with *tenebrosana*, Dup., this last name will have to be dropped in favour of *nigricana*, Steph., which has the priority.

*E. Germarana*, Hüb. (*puncticostana*, Steph., Wilk., Doubl.).—A small species, recognizable at once by its yellow face and palpi, and by the narrow, shining, blackish-brown fore-wings, with numerous short yellow costal streaks.

Dr. Wocke (in Staud. Cat.) calls this *Germmana*, quoting Hübner's first name, which seems to have been accidentally thus printed; but as Hübner afterwards corrected it himself, it seems an abuse of the law of priority to insist on retaining it instead of *Germarana*. Wocke quotes *atropurpurana* of Haworth and Stephens, as well as *immaculana*, Gn., as synonyms of this species.

Before quitting this group, it may be as well to refer to one more species which is exceedingly apt to be mistaken for a *Dicrorampha*, viz., *Grapholita ulicetana*, of which, small dark examples are constantly to be found mixed with them in collections. This may, however, nearly always be distinguished by the large brownish-grey ocellus which occupies nearly the whole of the apical third of the fore-wing, and contains several black lines.

Norwich: 10*th May*, 1872.

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## A NEW GENUS AND SPECIES OF *COLEOPTERA* ALLIED TO *MELOË*.

BY CHAS. O. WATERHOUSE.

### MELOËTYPHLUS, GEN. NOV.

Mentum small, transverse, rounded at the sides, bi-impressed; apical joint of the labial palpi short, ovate, that of the maxillary palpi compressed, slightly acuminate, truncate at the apex; mandibles bent almost at right angles in the middle, acuminate at the apex; labrum small, transverse, rounded at the sides and in front, impressed in the centre. Head very large, nearly as wide as the elytra at their greatest width, transverse, rounded at the sides, emarginate posteriorly, with a deep longitudinal impression from the neck to the anterior margin, almost dividing the head into two spheres. Antennæ very short, about three-quarters the length of the head, the basal joint largest; the second short, transverse; the third to ninth joints very slightly transverse, sub-equal, the tenth joint a little longer, the eleventh a little longer and acuminate.* Eyes none.

Thorax moderately convex, a little more than half the width of the head, slightly narrowed behind, obliquely truncate on each side in front, faintly longitudinally impressed on the disc.

Scutellum moderate in size, triangular, rounded at the apex.

Elytra covering the abdomen only in part, overlapping each other, inner margin parabolically rounded, their epipleuræ covering the meso- and meta-thoracic parapleuræ.

Legs strong, short; intermediate and posterior coxæ contiguous, femora slightly compressed; tibiæ much compressed, concave on both surfaces, the apical spurs to all the tibiæ short and acuminate; tarsi short, thick, three-sided, each joint with a somewhat deep impression on its two outer sides, the third or under-side of the basal four joints (basal three to posterior tarsi) spongy; the first to penultimate joints decreasing in size, the claw-joint when seen from above appears contracted at the base, when seen sideways is slightly acuminate and obliquely truncate at the apex; claws short, fissile nearly to the base, the under and upper divisions of equal length.

MELOËTYPHLUS FUSCATUS, sp. n.

*Fusco-testaceus, nitidus, ore, antennis, pedibusque fuscis, capite magno, convexo, in medio canaliculato, subtiliter punctulato, fronte transversim impresso. Oculis nullis. Thorace capite fere duplo angustiori, transverso, fere lævi. Scutello fusco-nigro, subtiliter punctulato. Elytris sat brevibus, convexis, singulis introrsum et ad apicem leviter rotundatis; supra subtiliter et irregulariter punctulatis, singulis lineâ obsoletâ a basi fere ad apicem notatis. Pedibus fuscis, subtilissime pubescentibus et punctulatis, tibiarum tarsorumque foveis lævibus.*

*Long.* 7 *lin. (sine abdomine* 6½ *lin.) : capitis lat.* 3½ *lin.*

*Habitat:* Pebas, E. Peru. *In coll.* E. W. Janson.

British Museum:
*May* 22*nd*, 1872.

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* One of the antennæ has the apical joint apparently deformed, this joint being transverse and rounded at the apex.—C. O. W.

*Notes on the Coleoptera of Slapton, with description of a new species of Scopœus.*—Having recently been deluded by a sudden outburst of fine weather into visiting Slapton, a few notes on the very moderate amount of success which we obtained during our five days' sojourn at the Sands Hotel may not be altogether uninteresting; and I have compiled them with the greater pleasure, inasmuch as the locality (however haunted by fishermen) is but little known to Coleopterists, and it is now exactly twenty years since I first made its acquaintance,—giving the result of my *then* experience in the September number of the 'Zoologist' for 1852. Although I have on several occasions since that period re-visited Slapton, I must confess that the low estimate which I originally formed (and placed upon record) of its productiveness has not been materially altered. Each time a few additional species have undoubtedly presented themselves, which could not but tend to raise its character as a collecting-station for the entomologist; but, still, the list which it has gradually supplied seems to me to fall very far short of what (to say the least) its exceedingly promising appearance and remote southern position would have led one to anticipate.

Our late expedition was perhaps more successful than any of my previous ones; and yet, in reality, the reverse ought to have been the case,—for not only was the time of our arrival there (May 2nd) full early for a region thus exceptionally bleak and exposed, but (alas!) the weather, which appeared so full of hope on our departure from Teignmouth, commenced to change by the time that we had reached the Ley, and became worse each day that we were there; so that it was next to impossible to do anything, and we were fairly driven home again at last by the inhospitality of the elements. It was on this account that I failed almost to *look* for the main species for which we went,—namely, the little *Hydroporus minutissimus*, which was detected there by my wife three years ago (*vide* Ent. Mon. Mag., vi, p. 57), and which we afterwards met with in considerable numbers; for the waters of the lake were so cold and turbulent (having been lashed into a thick fringe of white froth, along its edges, by a bitter N.W. wind) that there seemed literally no place for a sun-loving diver, whose proper habitat is among the warm shingle of the calm, shallow pools, which have been shaped-out by the inequalities of the shore. Yet, in spite of this, I just managed to ascertain, though with some amount of real difficulty, that it still tenants its old haunts, by capturing *two* individuals.

It would be waste of time to enumerate *in extenso* the common species of the district: suffice it to remark that they would for the most part arrange themselves under three tolerably distinct heads,—namely, those found in the water (which I have reason to think are not numerous), those peculiar to the shingle (decidedly the most characteristic members of the fauna), and those from the swampy lands and edges of the lake (*removed* from the long, shingly side, or barrier, which separates the latter from the sea), where *mud* (emphatically so called) and marsh-plants may be said to constitute the prevailing feature.

(1). Of the *Hydradephaga* (and, still less, of the *Philhydrida*) I will not now speak, the species which I have ever been able to obtain being, with the exception of *Hydroporus minutissimus*, of the very commonest description. Indeed, the two which appear more particularly to abound, are the universal *Noterus semipunctatus* and a *Laccophilus;* whilst even such plebian insects as the *Hyphydrus ferrugineus*, the *Hydroporus inæqualis*, *depressus*, and *palustris*, and the *Ilybius fuliginosus*, although occurring, are not by any means the pests that one might, from analogy, have been led to suppose.

(2). The shingle-collecting is more interesting,—the long, gently sloping banks of sea gravel which fringe the *outer* margin of the lake (parallel to the beach), for a distance of at least three miles, at all times repaying a careful investigation. It is there that the small and fragile *Homalota longula* congregates at the water's edge; though it runs with such amazing rapidity, and is so liable to be puffed off (when captured) by every breath of wind, that it is more easily seen than secured. And in spots only one degree less wet, that nimble little Elaterid the *Cryptohypnus dermestoides* (particularly the "var. *tetragraphus*"), forms quite a lively feature in nearly every handful of stones. Darting quickly also about this long shingly slope, or freshwater shore, the elegant *Lionychus quadrillum* is often extremely abundant, but we were rather too early for it during our late trip; and should a dead bird, or a fish, be found lying in this precise locality, there, almost for certain, the handsome *Dermestes undulatus* will be found to be keeping high festival in surprising numbers. Adhering to the under-sides of the larger and drier stones, further removed from the Ley, and nearer to the road which leads to Torcross, we obtained, by much labour, a tolerable series of the rare *Sydmænus pusillus* (16 of which were males, and 34 females), accompanied by the *Corticaria crenulata* and a few examples of a *Cephennium*, which I at first thought must be altogether new, but which I now believe (in conjunction with Mr. Rye) represents only a rather small and reddish state of the *C. thoracicum*. Here, on a former occasion, I have taken *Carcinops minimus* and *Apion confluens;* and here I likewise met with a single specimen of the *Lithocharis ripicola* of Kraatz, but we totally failed to obtain it again. And the same might be said of the *Harpalus tenebrosus*,—though its companion and near ally, the universal *H. attenuatus*, was quite as abundant this spring as is usually the case. However, by far the most important of our captures in this exact shingly spot remains yet to be noticed, and consists of a very narrow and minute *Scopæus* which we found, very sparingly, clinging, like the *Scydmænus*, *Cephennium*, and *Corticaria*, to the under-sides of the drier stones. While visiting Slapton three years ago, I met with four individuals of this *Scopæus;* but, having no leisure on our return home to examine my captures critically, and as they were evidently not the common *S. minutus* (*sulcicollis*, St.), I put them aside as probably referable to *S. Erichsoni*, the only other recorded British species of the genus; and it was not until we had secured five more, during our recent campaign, that I determined on looking at them with greater care, and comparing them with types of the latter. The first inspection showed at once that they were totally distinct; and as they certainly do not quadrate with any species to the description of which I have access, and since it is equally the opinion of Mr. Rye that they may represent, in all probability, an undefined member of the genus, I have compiled the following short diagnosis,—proposing for the species the title of *Ryei*.

### SCOPÆUS RYEI, *n. sp.*

*S. angustissimus, linearis, subdepressus, subopacus, pallide rufo-brunneus (abdomine vix obscuriore), antennis, palpis pedibusque infuscate testaceis, subtilissime densissimeque punctulatus, et pube minutâ cinereâ crebre vestitus; prothorace oblongo, tenuissime vix canaliculato; elytris prothorace vix longioribus; pedibus subgracilibus ac (præsertim tarsis) breviusculis.* *Long. corp. lin. vix.* 1¼.

*Habitat sub lapidibus in aridis juxta mare; ad Slapton in agro Devoniensi maritimo, Maio ineunte A. D.* 1869 *et* 1872, *parce lectus.*

Readily known from the *S. minutus* not only by its smaller size and still narrower outline, but likewise by its paler, or more reddish-brown, hue, and its more opaque surface,—which is more closely and finely punctulated, and more densely clothed with a delicate cinereous pubescence. Its abdominal segments also are less divided *inter se* than is the case with those of *S. minutus*, and its legs are thinner and less developed,—the feet especially being somewhat shorter.

(3). I will now consider the third category to which I have called attention,—namely, the species which inhabit the adjoining swampy lands, and the muddy edges of the lake which are in the *opposite* direction from the sea (and which have a more decidedly marshy character, *not* being composed of that thick bed of sloping shingle which gives so unmistakeable a feature to the long narrow ridge which separates the latter, on its south-eastern side, from the beach). Here sedge and bullrushes reign supreme, and various marsh plants grow in rank luxuriance. Yet, despite the multitudes of *Coleoptera* which tenant the decaying detritus, and which are chiefly to be obtained by treading-out the mud beneath, the species for the most part are of a very ordinary description. Those which at once attract the eye, as more particularly conspicuous, are the common *Elaphrus cupreus*, *Blethisa multipunctata*, *Chlænius vestitus*, and *Anchomenus marginatus*; and less abundantly the *A. viduus* (with its variety *mœstus*), and the *A. piceus*. In far greater profusion, however, than any of these, are the *Bembidium assimile* and various ordinary *Brachelytra*,—such as the *Philonthus micans* and *quisquiliarius* (along with its "var. *rubidus*"), the *P. nigritulus*, and the *Stenus Juno*, *cicindeloides*, *plantaris*, and *canaliculatus*. More sparingly, three brightly-coloured *Pæderi* are very showy,—namely, the *littoralis*, *riparius*, and *fuscipes*; and it is remarkable that the last of them, which Mr. Rye informs me is usually looked upon as scarce, appears (though not exactly abundant) to be the commonest of them at Slapton. The *Tachyusa atra* and *Homalota graminicola*, with the "var. *pseudo-cœrulea*" of the *labilis*, the *Xantholinus longiventris*, *Lathrobium quadratum*, and the *Philonthus laminatus*, though pretty general, are somewhat less obtrusive; and beneath the occasional heaps of rotten sedge the little *Atomaria mesomelas* and *Bryaxis sanguinea* may be seen oftentimes in swarms. I may remark that only one ♂ of the latter was observed amongst countless females. But what I regard as our best capture in this particular spot is the rare *Philonthus punctus*, of which we obtained a fine series by treading the mud on the northern (or perhaps, more strictly, the north-eastern) side of the Ley. During a former visit to Slapton, I met with a single example only of this well-marked species, and it was not until now that we succeeded in tracking it to its precise quarters.

I will not occupy space, however, by adding more, but will merely observe that the various marsh plants behind, and adjoining, the Ley, harbour most of the ordinary *Coleoptera* of such localities,—as, for instance, the *Telmatophilus caricis*, the *Phytobius notula* and *leucogaster*, and the *Ceuthorhynchus melanostictus*. In an old tree, scarcely removed from the hinder margin of the lake, I observed, amongst the ravages of *Synodendron cylindricum* and *Phlæophagus æneopiceus*, the dead remains of *Mesites Tardii*,—an insect which is widely spread over, and eminently characteristic of, the south-western districts of England and Ireland (in the *former* of which it was first detected by myself, at Mount Edgecumbe, during May, 1844: *vide* 'Zoologist,' ii, p. 702), but which has been met with likewise, more recently, in other parts of the country.—T. V. Wollaston, Teignmouth: *June 8th*, 1872.

*Notes on British Coleoptera, including three species new to our list.*—

ILYBIUS ÆNESCENS, Thoms., Opusc. Ent., 125.—According to Dr. Kraatz (Berlin. ent. Zeitschr., xv, p. 166), there is an English example of this species in the late Dr. Schaum's collection. It is closely allied to *I. angustior*, but is usually somewhat smaller, with less metallic reflections, and has its antennæ uniformly ferruginous, instead of pitchy at the apex. *I. guttiger* is distinguished from it by being decidedly larger and blacker, with more evident rows of punctures on the elytra. All my supposed *angustior* are to be referred to *œnescens*.

HYDROPORUS ELONGATULUS, Sturm.—My friend, Mr. T. J. Bold, in the 'Natural History Transactions of Northumberland and Durham,' vol. iv (1872), p. 376, demurs to my statement in Ent. Ann., 1872, p. 138, that this species, introduced by him (Ent. Mo. Mag., iv, p. 283), was "erroneously identified;" remarking that I had not seen his specimen, nor had any description of it. Passing over the latter six words, as irreconcileable with the concise and accurate account of the insect given by Mr. Bold himself (*l. c.*), I wish most emphatically to apologise to him for my wrong doing, and for which, the result of a misconception on my part, my sole excuse is that *H. elongatulus* was omitted by Dr. Sharp (who was, according to my belief, in communication with Mr. Bold) from his recent Catalogue.

Mr. Bold, however, informs me that Dr. Sharp did not see this specimen until after the appearance of the 'Annual' above mentioned, and that, in the opinion of the latter, the insect is "half-way between *tristis* and *elongatulus*, and it would not be safe to introduce the species on that specimen alone."

HOMALOTA HEPATICA, Er.—A note on the occurrence during the past spring of various single specimens of this hitherto rare British species may not be altogether uninteresting. Mr. E. A. Waterhouse (whom the insect would appear to follow, judging from former records by him in this Magazine), has recently twice caught individuals near Hampstead, in the public road, on the wing, and has swept up another from grass under a tree in the same locality. Mr. Waterhouse has also taken another example at Darenth, by sweeping blue-bells (this being the method by which he formerly captured other specimens at Ripon). Mr. Champion has taken four sporadic examples at Caterham, Shirley (in moss), and Chatham; I observed amongst some other *Brachelytra* an enormous specimen of it, taken fortuitously by the Rev. T. Blackburn near Greenhithe; and I have myself just "fluked" a fine ♂, when beating willows for *Erirhinus* on Wimbledon Common. I have taken the species formerly by sifting dead leaves at Coombe Wood, and some of Mr. E. A. Waterhouse's former captures were made in birds'-nests in London: but the true habitat of the species seems yet to be found. Mr. E. W. Janson used, I believe, occasionally to find it crawling on fences near Highgate.

OCYPUS MORIO, Auct.—The few British specimens (some 12 in number) which I happen to have retained as representing this common species in my cabinet seem divisible into two different races, of which, the larger has proportionably longer antennæ and tarsi (the latter members being also lighter in colour), a wider head, and the thorax slightly narrowed behind. This appears to be the type of all authors. A vague latitude as to width of head and other trifling characters (not, however, as to those above mentioned) is allowed by the standard writers on *Brachelytra*;—

none of whom, however, appear to have recognised the union of so many divergencies from the type in a smaller race, though they admit a great variation in size by the measurements given. My smaller individuals, in which the tarsi are shorter and dark, the joints of the antennæ evidently shorter in proportion (the whole antenna in some instances being very much abbreviated), the head is longer and not so wide (not a ♀ character, as I have ♂ showing this peculiarity), with a more evident smooth medial longitudinal linear space, and the thorax is quite parallel-sided, appear in some respects to come very close to *O. luganensis*, Heer, dubiously considered as distinct from *morio* by its author; but Heer states the punctuation of the head of this insect to be more delicate, and the thorax to have no medial longitudinal line, characters not appearing in my smaller race, of which, moreover, the Swiss author omits the other and more important differences. *Luganensis* is now referred to *O. cerdo*, Er., with which these smaller *morio* do not accord. In any of the smaller *Brachelytra*, it seems to me that such discrepancies as those above mentioned would, if constant, stand a very good chance of being accepted as of specific value. I make the above remarks with the idea of directing attention to the subject, so as to discover if other Coleopterists find these differences in their specimens.

Meligethes marrubii, Ch. Brisout.—Of this species, hitherto unique as British in Mr. G. R. Crotch's collection, I was so fortunate at the end of last month as to capture a single example, by casual sweeping, within a hundred yards of my own door. Further and diligent searchings for more have as yet been unsuccessful; perhaps because I fail to find any *Marrubium vulgare*. Sweeping the allied *Lamium album*, in blossom, has produced many *M. difficilis*, *memnonius*, and *flavipes*,—species never before observed by me so near London, probably from insufficient attention to their food-plant.

At the risk of being accused of undue repetition, but in the hope of causing other examples to be taken, I may observe that *M. marrubii* is most nearly allied to the somewhat rare *M. serripes*, but is more strongly and less closely punctured, the punctures being oblong, with a longer thorax, which is not nearly so strongly bisinuate at the base, and with the anterior tibiæ not evenly and rather finely serrate externally, but exhibiting two large and sharp teeth near the base, then two or three smaller, then a large tooth, and finally another small one at the apex.

Meligethes corvinus, Er.—I am glad to be able to fully corroborate this species as British. M. Brisout has returned me an example (belonging to Dr. Power) as certainly referable to it, and Mr. Champion has recently taken three specimens of it by sweeping at Caterham, and for one of which I am much indebted to him.

Phalacrus Humbertii, Tournier.—M. Henri Tournier, of Geneva, who is engaged upon a monograph of *Olibrus* and *Phalacrus*, has already recognised as a good species under the above name the insect referred to in my recent description of *P. Brisouti* as a very small form of *P. corruscus*, and which appears to differ from the latter, apart from its size, in the stronger punctuation of its elytra and the club of its antennæ.

I have communicated my specimen to M. Tournier, with my type of *P. Brisouti*, which he confirms as a good and distinct species.

**OLIBRUS PARTICEPS**, Mulsant, Opusc. Ent. 61, 127.—M. Tournier refers to this species an English insect communicated to him by me, and which was given to me by Dr. Power as *O. affinis;* the latter is unknown to me as British, and would appear, in spite of the constant references to it as a common species on the continent, to be not abundant anywhere, as M. Tournier only possesses a very small number of it.

**OLIBRUS BICOLOR**, Fab.—This species, rejected by me from the Catalogue annexed to my 'British Beetles,' is again in our lists. As far as my own knowledge goes, I may observe that large and brightly-colored specimens, representing the *bicolor var. flavicornis* of Mr. Waterhouse's Catalogue, as well as much smaller and darker individuals, are (as anticipated) returned to me by M. Tournier as *O. liquidus*, Er.

**CRYPTOPHAGUS RUFICORNIS**, Steph.—Among some beetles sent to me for examination by that hard-working and successful collector, Mr. J. Ray Hardy, of Manchester (shortly before his starting on an entomological expedition to California, where he now is), were a few examples of the very rare *Cryptophagus ruficornis*, taken by him last year out of fungus (*Polyporus*) on dead birch trees, at Chat Moss. As Dr. Sharp has well observed to me, this species should be placed in the same section of its genus as *pilosus*, instead of being associated with *dentatus*, where it now stands in our Catalogues.

As it is apparently not known to continental entomologists, it may not be altogether useless if I were, from the material at my disposal, to give a brief diagnosis of it here; although, if only from its striking peculiarity of colour, Stephens' description seems sufficient for its recognition.

[*Sectio* '* Das Halsschild mit Schwielenhöckern,' Erichson.]

**CRYPTOPHAGUS RUFICORNIS**: *elongatus, subcylindricus, sat profunde minus dense punctatus, rufo-piceus, elytris (præter humeros maculamque apicalem indeterminatam dilutiores) nigro-piceis, antennis pedibusque rufo-ferrugineis; pube fulvescenti sub-erectâ sparsim vestitus; capite minore, antennarum clavâ, ut in C. setuloso, abruptius majore; prothorace sub-quadrato-transverso, basin versùs vix angustato, lateribus bidentatis, dente anteriore prominulo posterius acuto, posteriore obtusiusculo ad medium sito, margine laterali incrassato, evidenter crenulato; elytris sat regulariter punctato-striatis.* *Long. corp.* 1—1⅛ *lin.* (*Anglic.*).

Stephens, Ill. Mand., iii, p. 78; *id.*, Manual, p. 137.

This insect is about the size and build of average specimens of *C. dentatus*, from which it is at once removed by its thorax possessing four irregularly smooth disco-lateral callosities and an evident (though very delicate) carina in the middle of its transverse basal depression. These sectional characters, however, appear to me to be but various degrees of development of a structure belonging to the whole genus, and not to be trustworthy. But its color (suggestive, perhaps, of a mixture of that of *C. serratus* and *C. scanicus*), and its deep punctuation, which on the elytra is about of the same degree as that of the former of those species, but rather more disposed in striæ, which are more closely packed, readily distinguish it from all of its genus known to me. The anterior denticle of its thorax is a trifle more projecting and more acute behind than in *C. pilosus*, but the posterior denticle is broader and not so sharp, and the lateral margins more evidently crenulated that in that species: in general outline, this segment perhaps more resembles the thorax of *C. umbratus*.

Of species not as yet recorded as British, *C. dorsalis*, Sahlb., of which a color variety might possibly be supposed to resemble *C. ruficornis*, is readily distinguishable by its smaller size, finer and closer punctuation, more depressed build, sharper thoracic posterior denticle, &c.; and its ally, *C. niger*, Bris., though more nearly resembling *C. ruficornis* by being darker in color, with a stronger antennal club, and with its thorax straighter at the sides, seems abundantly distinct through its close and delicate punctuation, slight and obtuse anterior thoracic denticle, &c.

Baudi (Berlin. ent. Zeitschr., xiv, p. 56) has recorded a black var. of *C. pilosus* from Piedmont.

APHODIUS NIGER, Panz.—Baron Von Harold (Berlin. ent. Zeitschr., xv, p. 266), noticing the universal confusion between the black forms of *A. plagiatus* and this species, which is much rarer than is supposed, only five specimens of it having come to his possession, remarks that it may be known by the basal joint of its posterior tarsi being longer than the upper apical spine (these are, when evenly flattened, of the same length in *plagiatus*), its metasternum being smooth in both sexes, and its invariably non-metallic color.

I think it probable that the insects on which this species has been recorded as British, and declared to be "abundant at Deal," are only immaculate and non-metallic forms of *plagiatus;* but I have never yet seen a supposed British exponent of *A. niger*.

ZEUGOPHORA RUFOTESTACEA.—The insect recently described in Berlin. ent. Zeitschr., xv, p. 162, under this name by Dr. Kraatz seems without doubt to be our well-known Scotch *Z. Turneri*, described by Dr. Power in the 'Zoologist' for 1863 (p. 8735), and subsequently more fully by myself in the 'Entomologist's Annual' for 1864, p. 70, on the frontispiece of which it is figured (f. 8). This has erroneously been considered a var. of *Z. scutellaris*.—E. C. RYE, 10, Lower Park Field, Putney, S.W.: *June*, 1872.

*Note on the food-plant of Magdalinus carbonarius.*—When in Braemar last year, I discovered what I had been unable previously to ascertain, viz., that *M. carbonarius* in the larval state feeds upon the common birch. I found a decayed branch of this tree, about an inch and a-half in diameter, in which there were three mines close together. At the termination of each of these was the beetle—dead. The course of the larva had been between the bark and the wood, the latter of which was very irregularly, and rather deeply, engraved.—ROBT. HISLOP, Blair Bank, Falkirk: *May*, 1872.

*Natural History of Anchocelis litura.*—I owe my acquaintance with this species, as well as several others, to the great kindness of Mr. George Norman, of Forres, who sent me a batch of eggs on October 2nd, 1869; they were mostly laid thickly together in a flattish mass on a piece of paper, though there were some few loose and separate from each other: they began to hatch with Mr. Hellins at Exeter on the 5th of April, 1870; by the 22rd, the larvæ were ⅛-inch long; by May 15th they had attained twice that length, and about the end of the month they, like mine, all went to earth: the moths appeared September 2nd—11th. With me, however, the eggs did not hatch before the 11th of April, 1870.

The shape of the egg is circular, but flattened, and greatly depressed in the centre, slightly ribbed and reticulated, having withal a shrivelled, empty appearance, as though its contents had been squeezed or dried out of it: the colour at first is pale yellow, soon after turning to a slightly pinkish leaden hue, and the shell is very glistening, in fact, the flat mass of eggs seemed smeared over with a coating of transparent varnish or gum, which I fancy would in nature attach them to some cover on the upper as well as the lower surface; I think they would be laid in cracks, or under loose bits of bark; as the time of hatching approached the colour seemed but very little heightened, and when the young larvæ had emerged from them, the empty shells looked brilliantly crystalline.

The newly-hatched larvæ were pinkish-grey in colour, with the dorsal vessel appearing as a dark grey, leaden stripe, the pale brown head large in proportion: within a fortnight they became of a dull flesh colour, after the second moult they were pale greyish-green, and soon turned darker, then showing the usual lines pale and distinct, their length being now three-eighths of an inch, and their figure proportionately stout; by the 6th of May they were five-eighths of an inch long, of a yellowish-green colour, the lines rather paler green, the tubercular dots exceedingly small and blackish; by the 15th, they were three-quarters of an inch long, of a pale yellow-green, the lines all present but unobtrusive; up to this time they had fed almost entirely on the common garden monthly rose, which they preferred from the first to all other food given them in great variety from time to time; but at this period they were tried with bramble, and, after tasting it, they no longer cared for rose, and thenceforward fed up chiefly on brambles of different species.

The full-grown larva was one inch and a half in length, moderately stout, cylindrical, and uniform in bulk, with tolerably well defined segmental divisions; the colour on the back and sides, as far as the spiracles, green, somewhat inclining to olive, and freckled with a little darker green, and, on this freckled surface, the dorsal and sub-dorsal lines could be distinctly traced, a little paler than the ground, but edged with interrupted, freckly, almost blackish, lines, which, in some instances, especially with the dorsal line, seemed almost to obscure the pale line they enclosed: the tubercular dots were also paler than the ground, and very finely ringed with darker green; the boundary of this green colouring along the side was completed by a black line, interrupted only where the spiracles (white, outlined with black) were placed upon it; immediately beneath the spiracles the contrast of whitish-yellow deepened a little by degrees into a pale yellowish-green, which was the colour of the belly and legs, these last were tipped with brownish: the head was brownish-green, freckled with darker; the second segment was not very different in texture from the rest of the body, it was in most examples edged in front with very dark brown, and the pale lines that appeared on it were without any dark edging: the whole brood presented scarcely the least variety, either in colouring or detail, but were as constant as possible in their uniformity.

Some of the larvæ, which were kept in a flower-pot with sand for soil, formed very neat, compact cocoons of silk, covered thinly but uniformly with the sand, rather more than five-eighths of an inch long, and about five-sixteenths broad; probably, in a coarser soil, they would have been less regular in outline.

The pupa was rather short and stout, smooth and cylindrical, ending in a short pair of blunt spikes, diverging from each other; the colour a deep reddish-brown.—WM. BUCKLER, Emsworth: *June*, 1872.

*Description of the larva of Brephos notha.*—I had no opportunity of becoming acquainted with this species till 1869, when Mr. W. H. Harwood kindly sent me several young larvæ; these fed well, but as I did not know how to provide for their pupation, my hopes of seeing the imago in 1870 were sadly blighted. However, in that year Mr. W. R. Jeffrey sent me two larvæ from Saffron Walden, and, as I managed to accommodate them more suitably than my former stock, I succeeded in rearing two fine moths.

As the insects appear early in April, the eggs must be laid some time during that month; the larvæ feed on Aspen *(Populus tremula)*, spinning the leaves together flat-wise for concealment; those I had in 1869, on June 2nd, were still small, barely half-an-inch in length, but they grew fast after this, and retired to change by the 29th. The dates I have for the appearance of the imago are April 8th and 9th, 1870 (both cripples), and April 4th and 7th, 1871.

The larva, up to half-an-inch in length, is very dingy, nearly black, but bearing some exceedingly fine, pale drab longitudinal lines; after moulting, and when about three-quarters of an inch in length, it becomes less like a *Noctua* in form than it was before, and more like a *Geometer*, both in form and manner of progression; its colour now is of a delicate green, inclining in some instances to glaucous, the longitudinal lines become whitish-yellow; the head and second segment spotted with black; the segmental folds whitish-yellow. The growth now is rapid, and, in some individuals, black spots appear on the sides, in a day or two developing into stripes; but in others, no more spots appear than those on the head and the second segment.

The larva. when full-grown, is about one inch in length, not very stout, cylindrical, and diminishes so very slightly towards the extremities, that it appears of uniform bulk throughout: the head is full and rounded: the two front pairs of ventral legs are much less developed than the next two pairs, and the hindmost pair are splayed laterally: beneath the anal flap is a small point, with a tubercle on each side of it; the segments are plump and well defined: the mode of progression is an undulating, half-looping, quick walk, changed to what may be called a run when the larva is exposed to light.

The ground colour is now of a pale subdued tint of green, or else a bright velvety yellowish-green, the dorsal vessel rather a deeper tint of the same, edged with fine lines of pale greenish-yellow, the sub-dorsal fine line is yellow, and between it and the spiracles runs another such fine line—the side being now more or less black is, by this pale line, divided into two broad black stripes, which, in some specimens, are complete, in others only partly so; the spiracles are white, outlined delicately with black, and beneath them is a broadish stripe of pale yellow or whitish-yellow; the belly and legs paler green than the back: in one individual a short, tapering, black streak, issued at the end of each segment for half its length forwards as an edge to the sub-dorsal line, but these streaks began on the twelfth and ceased at the fifth segment. The black marks on the head and second segment appear to be constant, and characteristic of this species, they may be more minutely described as follows: a broad irregular blotch down the front of each lobe, forked at the side, and a round spot on the face between them, and two pairs (sometimes more) of black dots on the second segment; the pale lines of the back are absent from the second segment and from the anal flap; the anterior legs generally dotted with black. One of Mr. Jeffrey's larvæ furnished a good variety; its colour was a dingy, rather olive-brown, with the lines of a pale pinkish-grey, with only the usual black marks on the head, second segment, and anterior legs.

My first set of larvæ I furnished with earth and moss for pupation, with the result of causing the death of all but two, which produced crippled insects; the second set were supplied with pieces of bark, into which they could bore, and I now understand that a dead stick, or piece of dry, decaying wood would have been better still; for the habit of the larva is to excavate in the solid bark or wood a smooth, cylindrical chamber (reminding one much of the work of some of the carpenter bees) just big enough—without the least waste of space—to accommodate the pupa with the shrivelled larva skin behind; the circular entrance to the chamber is stopped with the gnawed raspings of the wood mixed with silk, but there is no silken lining to the chamber itself; the pupa lies with its head towards the entrance, and, after the exit of the moth, the empty pupa-skin remains in the chamber.

The pupa is about half-an-inch long, cylindrical and uniform, except a rapid tapering at the tail end, and tolerably smooth, except at the abdominal divisions, where there are rings of minute points; the abdomen terminates in a thick, blunt, somewhat flattened knob, furnished with two spikes, which, instead of projecting as usual in the same line with the body (or knob), turn off at right angles on either side; the colour a shining, dark red-brown.—Id.

*Larvæ of Eupithecia pygmæata.*—I have much pleasure in announcing that I have two larvæ of *Eupithecia pygmæata* feeding on flowers of *Stellaria holostea,* and I hope that before long they will be sufficiently grown to have their description taken by my friend Mr. Crewe.

Mr. Hodgkinson most kindly sent me a female moth, the only one he has captured this year, but unfortunately she died after laying but three eggs. Mr. Hodgkinson tells me he cannot find *Stellaria holostea* growing in the locality for the moths; but Herr Carl Plotz, to whose books of beautiful drawings reference has been made before in these pages, had figured the larva on that plant, and I found my larvæ take to it quite readily, as if it were their natural food; I should say they eat a little of the petals of the flowers, but seem to prefer the anthers and pollen.—J. Hellins, Exeter: 11*th June,* 1872.

*Captures of Lepidoptera near Aberdeen in* 1871.—In the following list, I shall merely mention the scarcer species of *Lepidoptera* which fell to my lot last summer, as a complete list of those hitherto found in this district will be given in the list of Scottish *Lepidoptera* now appearing in the 'Scottish Naturalist.'

The localities in which I collected last summer are all in Aberdeenshire and the north of Kincardineshire, and, excluding Braemar (which is 50 miles from Aberdeen), none of them is over 20 miles from that town. The chief localities, besides Aberdeen itself and the immediate neighbourhood, were Muchalls, on the coast a few miles south, Banchory in the valley of the Dee, and Inverury (where I collected with Mr. Tait), about 12 miles from the sea.

Of *A. cardamines* one male occurred at Inverury on April 24th; *S. Semele* swarmed between Aberdeen and Muchalls, along with *L. Alsus* and *L. Artaxerxes*, neither of which species, however, is here confined to the coast, though both are local.

Of *Sesia philanthiformis* I got several larvæ near Aberdeen in April, and one moth at Muchalls in July; and this year (1872) I have again taken larvæ of this species. *Hepialus sylvinus*, a very local species here, also occurred at Muchalls, and *H. velleda* was common and widely distributed.

Of the *Notodontidæ* I got larvæ of several species, *P. bucephala* being very common: a young brood of this species occurred at Banchory, on birch, on September 12th. Larvæ of *D. fascelina*, and of *Demas coryli* were not very scarce, the latter species at Fyvie; but *Lithosia complanula*, besides being the only representative of its family, was very scarce, one specimen occurring at Muchalls. *N. plantaginis* was not uncommon, and larvæ of *S. fuliginosa* were abundant; while of *Liparis auriflua* one specimen was taken in Aberdeen in July, and is now in my possession: it must, surely, have been accidentally introduced. *P. lacertinaria* occurred at Banchory, but was rather scarce.

Among the *Noctuæ*, more of my captures were made at light than in any other way, some of them being pretty good species: *T. batis* was scarce in September as larvæ at Banchory. Of *Bryophila perla* a pair came to light, the first time the species has been taken in the district.

Among the *Acronyctæ*, my best captures were larvæ of *A. menyanthedis*, pretty commonly on heather, willow, &c.; and of *A. myricæ*. Of this latter species, I found several cocoons on stones near Aberdeen, from which the insects afterwards emerged. I also got the moths themselves at rest; and, in September, I found several larvæ, which seemed to be those of *A. myricæ* on *Rosa canina*, *Rubus fruticosus* (bramble), and *Viola canina;* they have spun up, so I hope to be able to make sure on the point. *Nonagria fulva* was scarce at Banchory and Fyvie, and *Gortyna flavago* came once to light (September 16th). *Hydrœcia nictitans* was very common on ragwort, on the sand-hills. *Mamestra furva* occurred at Inverury, but was scarce, and so also was *Apamea unanimis; Miana arcuosa* pretty common. Several specimens of *Caradrina blanda* came to light; all the species mentioned as having come to light were taken in Old Aberdeen.

The genus *Agrotis* is pretty well represented in this quarter, 13 species at least occurring here; including *A. valligera*, very abundant on the links on ragwort; *A. cursoria*, rather common, at light, in August; what seems to be *A. obelisca*, rare, at light; *A. præcox*, scarce, at light; *A. pyrophila*, scarce; and *A. lucernea*, at Muchalls, not uncommonly. *Triphæna subsequa* occurred at Inverury, and also some fine specimens of *T. orbona* (var. *Curtisii*)*; Tæniocampa rubricosa* and *T. stabilis* were both common. *D. conspersa* was scarce and local; and of *Dasypolia Templi* one or two were taken at light, and also larvæ in stems of *Heracleum sphondylium*. *Epunda lutulenta* occurred at Inverury, but was scarce, *E. nigra* being far more plentiful.

Of *Hadenidæ*, the best taken were *Aplecta tincta* at Braemar, very abundant; *Hadena glauca* at Inverury; *H. chenopodii*, scarce, at Inverury and near Aberdeen; and *H. rectilinea* at Braemar.

The *Geometræ* I shall mention very briefly, having already occupied so much space on the preceding groups. *Gnophos obscurata* was common at Muchalls, to which locality it seems to be confined; *Dasydia obfuscata*, scarce, but extending from Muchalls to Braemar; *Psodos trepidaria*, very common on nearly all the hills in Braemar, over 2000 feet; *Ephyra pendularia*, in Braemar; *Acidalia fumata*, very common in Braemar; *Larentia salicata*, common in Braemar; *L. olivata*, common; *Emmelesia ericetata*, common in Braemar and near Aberdeen; *Eupithecia pumilata*, common, at Inverury; *Thera juniperata*, larvæ, in Braemar; *Coremia munitata*, common, occurred at 2600 feet, in Braemar; *Cidaria psittacata*, rather scarce; *C. miata*, common; *C. pyraliata*, rather scarce, at Muchalls, Aberdeen, &c.; *Chesias obliquaria*, common on the links, Old Aberdeen; *Tanagra chærophyllata*, local, and rather scarce, at Muchalls.

All those from Braemar were taken during the month of July, from the 10th to the 25th; in addition to those mentioned in this list as from that locality, is *Zygæna exulans*, which has been already well discussed by Entomologists, and of which I need say no more.

Many of the most interesting of our native *Lepidoptera* have been omitted by me from this list, not having been taken by me last summer. Among the *Sphingidæ* alone there have been taken here, *Smerinthus ocellatus* (once); *S. populi*, *A. Atropos*, *S. convolvuli* (every year almost); *D. galii* (rare); *C. Celerio* (twice); *C. Elpenor* (once); *C. porcellus*, *Macroglossa stellatarum*, *M. bombyliformis*, *S. philanthiformis*, and *S. culiciformis*, at Braemar.—James W. H. Traill, King's College, Old Aberdeen: *May*, 1872.

*Rare Lepidoptera taken in the Isle of Man.*—Judging from what I saw in my friend Mr. C. S. Gregson's collection, the Isle of Man seems to produce an unusual number of rare *Lepidoptera*. I will mention only the following:—a *Clostera* different from any of our known species, *Acontia solaris*, *Crambus alpinellus*, *Agrotis spinifera* (much finer and larger than the continental specimens), *Leucania Loreyi*, *Caradrina exigua*, *Micra parva*, *Abraxas pantaria*, *Heliothis armigera* (5), *Sterrha sacraria* (9), and *Chærocampa Celerio*, bred from a larva he found there.

Mr. Gregson has a series of *Incurvaria canariella*, Stainton (Ent. Ann., 1872), under the name of *Incurvaria spinosella*, a name they have borne in his cabinet for many years; he had the specimens from the late Mr. Hague of Staleybridge, who took them in 1856. Mr. Gregson tells me he sent a specimen to Lewisham, under the name of *Incurvaria spinosella*, in 1870.—J. B. Hodgkinson, 15, Spring Bank, Preston: *April 26th*, 1872.

[Dr. Staudinger now suggests that the *Incurvaria* may be the *flavifrontella* of Heinemann. Von Heinemann thought he recognised in his *flavifrontella*, the *flavifrontella* of the Wiener Verzeichniss, published in 1776.—Eds.].

*Note on Eidophasia Messingiella and Catoptria aspidiscana.*—I went to look for this species ten days ago, though I knew beforehand that I must be too late, and instead of finding any, I got wet through. I believe it has rained here incessantly for six months. I have been twice after *Catoptria aspidiscana*, but only took two specimens in six days. I collected a good many larvæ of *Rhodophæa marmorella*, but they are very bad to get, and very local.—Id.

*Note on the relations between colour and edibility in larvæ.*—It has often been said that birds do not feed upon larvæ which are gaily coloured. A dozen years since I planted a quantity of Hounds-tongue in the garden, and placed larvæ of *Callimorpha dominula* upon it, and the species completely established itself here. This spring there were hundreds of caterpillars; but, about three weeks since, I noticed that their numbers were decreasing, and could not account for it. At last I found that a pair of large tits (*Parus major*), which had a nest in a hole in a tree just outside the garden, fetched them away to feed their young ones. Now this is one of the brightest-coloured larvæ that I know of. The larvæ of the *Zygænæ* are also gaily-coloured, and they are the favourite food of Cuckoos.—H. Doubleday, Epping: 30*th May*, 1872.

*Practical hint for Lepidopterists.*—That popular writer, Mr. Edmund Yates, in a tale called "The Yellow Flag" now being published in "All the Year Round" (8th June), enunciates a statement to the effect that one of his characters "would "have found the winter evenings dull, had it not been for the excitement of *perpetually re-arranging* his large collection of moths and butterflies, *renewing their corks* "*and pins*," &c. The italics are ours.—Eds.

*On a fungoid epidemic among Xanthochlorus (tenellus, Wied. ?).*—On the 13th August, 1871, I happened to examine closely some oak bushes at Shirley, when I was struck by the vast number of minute dead *Diptera*, all belonging to one species, which were affixed in the posture of life to the under-side of the leaves. At first I gave but little attention to the matter, being engaged in researches of another kind; but, when branch after branch on being turned up revealed the same ghostly assemblage, it struck me that I had come across the trail of a disease, like the one which *Empusa muscæ* causes among domestic flies. Further examination proved this surmise to be well founded. The area infected comprised a triangular rising piece of ground about an acre in extent, covered with a rank and mixed undergrowth, principally oak, interspersed with scattered timber trees of different sorts. A dense fir-wood formed the high back ground, while two roads, backed by steep banks, high palings, and a row of oaks, shut in the remaining two sides of the triangle, and were joined in one deep gully below.

A deserted half-overgrown gravel-pit, with large pools of rain water, occupied the corner nearest the junctions of the roads, just below the infected area. At the junction of the two roads below the gravel-pit, a considerable number of felled oaks were piled up. The spots where they had been felled were still marked by the discs of their roots, filled with the decaying chips, macerating in rain water. The weather at the time was warm and showery. Aspect due South. The prevailing local direction of the current of air, near the surface of the ground, was up the gully, across the gravel-pit, and over the infected area. I tested this repeatedly by setting free some spiders' webs. Having made this preliminary survey, I descended into the gully, and examined the oaks and all surroundings, but could not find a single one of the flies either dead or alive. The interior of the gravel-pit and the palings had their turn next, with a negative result, as not a fly was to be seen. I then examined the lateral borders of the pit nearest the roads, and here, on the under-side of the foliage of the oak-bushes, a few of the "dummy" flies turned up, all in life-like attitudes. I tried hard to find specimens on other trees or low plants, but failed in obtaining any. Skirting the upper-side of the pit, I found the dead flies in greater numbers, till at last I encountered the "gros de l'armée" on the spot where I had started from, in a place which it appeared to me these *Diptera* could not well have reached in such numbers, owing to the density of the surrounding bushes, except by crossing the pit on the wing. Here their life-like remains were seen by hundreds. Turning my back upon this upper end of the pit, I worked my way through the dense undergrowth towards the fir-wood, watching the foliage as I went along. But gradually the number of flies grew less, and at last, while still at a good distance from the foremost row of pines, I found the bushes quite free of the bodies. Clearly, therefore, the centre of the disease was near the border of the pit, a fact of which I took good care to make sure by repeatedly starting off at different angles from the spot where the flies were most numerous. Of live specimens I could *not* find one, although I worked very hard for some hours. The dead ones, of which I secured a series, and which have since been identified by my friend Mr. Verrall, as belonging to the genus *Xanthochlorus* (probably *X. tenellus*, Wied.), presented a very characteristic appearance while fresh. Firmly attached by their outstretched legs to the under-side of the oak leaves, with the beautifully iridescent wings spread out at right angles from the body, with porrected antennæ and a fully stuffed body and thorax, their outward appearance, in some instances, belied their real state. But other specimens told the story only too plainly, their bodies being surrounded by a silk-like, silvery halo of spores, while their thorax and abdomen were closely fastened to the leaf by a felt-like, white fungoïd mass; a few specimens were even covered with a close, white silvery shroud, rendering all parts of the body indistinct, except the wings and legs. Several bodies which I examined were stuffed with a white mass, undoubtedly the mycelium of the *Empusa*.

So far I have stated what are facts, and I must leave it to more competent minds to read them aright; but, taking all circumstances into consideration, I cannot help thinking that the vicinity of the rain water pools in the gravel-pit must have had something to do with the outbreak of this disease just on the borders of the pit: but why this congregation of dead just on the upper border? had the prevailing current of air anything to do with this? One other point must not be overlooked— the flies were only on the oak, but why?; am I to suppose that they are attached to that tree exclusively; if not, why was no other foliage or object selected to settle and die upon? These are only a few of the questions arising out of the observation before us, and concerning which I feel tempted to ask: "Quien sabe?"—ALBERT MÜLLER, South Norwood, S.E.: *May*, 1872.

*Extraordinary circumstance regarding a dipterous insect.*—On the last day of May, when I was collecting in one of our woods, I saw an extraordinary apparition flying through the air. I caught it, and found it to consist of two males and one female of a species of *Molobrus* simultaneously connected. Has any one ever before noticed a similar instance?—C. W. DALE, Glanville's Wootton: *5th June*, 1872.

[We do not at this moment remember to have seen records of this anomaly concerning the *Diptera*, but it has several times been noticed in other orders.—EDS.]

# Reviews.

FOURTH ANNUAL REPORT ON THE NOXIOUS, BENEFICIAL, AND OTHER INSECTS OF THE STATE OF MISSOURI. By CHARLES V. RILEY, State Entomologist. JEFFERSON CITY, Mo. 1872. p. 145.

It speaks volumes for the far-sightedness of our Transatlantic cousins that they are fully alive to the necessity of having thoroughly sound and scientific information on subjects connected with economic entomology; and the State of Missouri will, at any rate, never have cause to regret having, as its first entomological officer, a gentleman of such ability as Mr. Riley, whom we had the pleasure of seeing in England last summer. This fourth report is fully equal, if not superior, to the preceding ones, and we cannot but think that English horticulturists, farmers, &c., would do well to study the series; they could not fail to acquire much valuable information thereby, for some of the species treated upon, *e.g.*, *Carpocapsa pomonella*, are well-known English pests. Europe has been blamed by Americans for the introduction into their Continent of several noxious insects, of which the cabbage-butterfly and gooseberry saw-fly may be cited as recent examples. On the other hand, the terrible vine-aphis (*Phylloxera vastatrix*), now proved to have been imported from the United States, threatens the ruin of the vineyards of Europe. The European notion, when anything of this kind occurs, is to form a Commission of enquiry on the subject; in America, it is considered safer to have a regular official, whose duty it is to examine into the evil when the first indications show themselves, rather than wait until it is thoroughly developed.

TRANSACTIONS OF THE NORFOLK AND NORWICH NATURALISTS' SOCIETY, 1871—72.

We have again the pleasure of noticing the records of the work done by this energetic local society. Possibly there is less entomological matter than usual, but all branches of Natural History are represented. Mr. Barrett publishes his further observations on coast insects found inland, and the President (Mr. Henry Stevenson, F.L.S.) in noticing the wholesale destruction of birds' eggs by dealers, casually alludes to the fact that *Papilio Machaon* has been all but exterminated by the same ruthless individuals.

THE BRITISH SPECIES OF CRAMBUS. By F. BUCHANAN WHITE, M.D.

This pamphlet, the contents of which were originally published in the pages of the 'Scottish Naturalist,' will be found extremely useful for the determination of the species of the difficult genus *Crambus*. The descriptions are lucid, and the notes on the distribution of each species in Britain, and on the continent, are very valuable, as are also the indications of species which, though not hitherto recorded as British, may be reasonably expected to occur here.

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ENTOMOLOGICAL SOCIETY OF LONDON: *3rd June*, 1872.—Prof. WESTWOOD, President, in the Chair.

Mr. Stainton exhibited a twig of cork-oak from Cannes, placed in his hands by Mr. Moggridge, bearing examples of a large, black, berry-like Coccus.

Prof. Westwood exhibited a large cotton-like mass envelopping the cocoons of a minute parasitic insect of the genus *Microgaster*. He had extracted 717 insects, and, as many more remained, there were evidently about 1000 examples, all of which had infested a single larva of some large species of *Bombycidæ* in Ceylon.

Mr. F. Moore had noticed a similar occurrence in the larva of a species of *Odonestis*, from Bombay.

Prof. Westwood also exhibited an apple twig, the buds of which were destroyed by some larva which he thought might be that of one of the *Tortricidæ*.

Mr. Stainton exhibited a drawing of a vine-leaf mined by the larvæ of *Antispila Rivillei*, found at Massa di Carrara by the Hon. Beatrice De Grey, and a bred specimen of the perfect insect. He detailed the circumstances that led to the re-discovery of this insect, which had not been observed since Riville sent an account of it in a letter to Réaumur in 1750, from observations made in the island of Malta.

Mr. Higgins exhibited a selection of beautiful species of *Cetoniidæ*, principally from Java, recently obtained from Dr. Mohniki.

Mr. Jenner Weir stated, that having recently planted a variegated form of *Rhamnus alaternus* in his garden at Blackheath, it was at once discovered by *Gonopteryx rhamni*, which laid its eggs thereon. He had not observed this species in his garden during sixteen years, and considered it remarkable that the plant should so soon have attracted it, although, in outward appearance, it was so utterly different from the two indigenous species of *Rhamnus*.

Mr. McLachlan read a note received from Prof. Newton concerning the habits of *Merope persicus*, which bird lined its nest with the remains of dragon-flies, on which insects it apparently fed.

Mr. Müller called attention to a paragraph in the 'Times' concerning a plague of ants on the island of May to such an extent to render the land practically useless to the lighthouse keepers, so far as cultivation was concerned, and which had occasioned a visit to the island of the Northern Lighthouse Commissioners for the purpose of investigating the matter.

The Secretary read an extract from the 'Petites Nouvelles Entomologiques' of the 1st June, concerning the discovery of large numbers of *Calosoma sycophanta* on the dead body of a man who had hung himself in a forest near Rheims. As the corpse was in a state of putrefaction, it was considered that the odour had attracted the beetle; and it was suggested that bodies of animals should be suspended in woods for the same purpose.

Prof. Westwood alluded to a notice by M. Guenée in the same journal concerning a female of *Spilosoma sordida*, which showed no inclination to pair with a male which, abnormally, was coloured as in the opposite sex, though she instantly mated with an ordinary male which emerged soon afterwards. M. Guenée seemed to think this a proof of the provision made by nature to ensure purity of race; but Mr. Stainton thought that, more probably, the first male was neglected as being unable to continue the species.

Mr. Briggs alluded to the infertility sometimes existing in insects, and mentioned especially that he had once failed to obtain fertile eggs from three pairs of *Clostera curtula*. He further remarked on the depraved sexual instincts exhibited in *Noctuæ* when intoxicated on 'sugar.'

# NOTES ON *CICINDELIDÆ* AND *CARABIDÆ*, AND DESCRIPTIONS OF NEW SPECIES (No. 16).

BY H. W. BATES, F.L.S.

CTENOSTOMA EBURATUM, n. sp.

*Nigerrimum, nitidum; elytris humeris distinctis, postice nec dilatatis nec inflatis, usque ad apicem scabroso-punctatis, nullo modo rugosis; fasciola curvata prope basin, alteraque pone medium, albis, fere impunctatis.* *Long.* 6½ *lin.* ♀.

Very similar in colours and form to *Ct. luctuosum;* body above and legs clothed, as in that species, with very long, erect, black hairs. Distinguished by its basal elytral fascia, which is narrow, and curves a little from the shoulder towards the suture, which it does not reach. The median white fascia is similar to that of *Ct. luctuosum*, but does not touch the lateral margin, and is narrowed and hooked at its termination near the suture; the apex of the elytra is narrowly bordered with whitish. In form, the apex (in ♀) is rounded and dehiscent at the suture; the surface of the elytra is very coarsely scabrose-punctate without transverse wrinkles, and the punctuation continues, but much less strongly, to the apex. The antennæ are tawny, with pitchy marks on the first four joints. The forehead is coarsely punctured, and clothed with hoary hairs.

Taken by Mr. Rogers in the interior of S. Brazil.

In Mr. W. W. Saunders' collection, and my own.

CICINDELA DITISSIMA, n. sp.

*Læte viridis, capite thoraceque creberrime subtiliter scabroso-punctatis, opacis; elytris velutino-opacis, sutura lineaque sub-marginali nitidioribus, utrinque vitta mediana flavo-ochracea; labro flavo, nigro-marginato, in utroque sexu elongato, antice truncato, valde tridentato, dente mediano robusto, apice bifido.* *Long.* 7½ *lin.* ♂ ♀.

Approaches nearest *C. aurofasciata*, but much more elongate and narrower. The head and thorax are much more finely shagreened than in that species, and the labrum differs in form from all the species of the group, being only 5-dentate, with the lateral tooth on each side broad and scarcely prominent, and the three apical teeth projecting from a straight anterior truncature of the organ; they are very much deflexed in the ♀, and the middle one is long and bifid at its apex. The head is broader behind the eyes, and more exserted than in *C. aurofasciata*. The thorax is very similar in form to the same segment in that species, but is narrower than the head. The elytra are very elongate and parallel-sided, obtusely rounded at the apex; their velvety surface appears rich dark blue in certain lights, and the yellow vitta is continuous from the base (which is also yellow, including a streak on the shoulder) to very near the apex, but it is slightly uneven in width. The under-side of the body is blue-green, with the sides of the metasternum (not the episterna) and of the abdomen clothed with silvery pile. The trochanters are yellowish, and the femora tinged with golden. The palpi are yellow, with two joints of the maxillary and one of the labial black.

Hong Kong.

CICINDELA VELATA, n. sp.

*C. aurulentæ simillima; differt capite et thorace suprà æneo-nigris, hoc angustiori cylindrico; elytris læte nigro-velutinis, pruinosis, sutura æqualiter aureo-marginata, utrinque maculis* 2 *prope basin,* $3^{ia}$ *prope apicem, fasciaque mediana hamata, flavis. Long.* 8 *lin.* ♂ ♀.

Deceptively similar to *C. aurulenta*, but differing from all the varieties of that species by the unicolorous head and thorax, and the golden margin of the suture not dilated near the base. The labrum also is different in both sexes, having very short and scarcely prominent teeth. The head is wider, with the eyes especially more prominent. The thorax is very much narrower than the head, with nearly straight sides; its surface is not velvety, and the disc is coarsely wrinkled transversely. The yellow spots of the elytra nearly agree with those of the var. *flavomaculata*, the median forming a transverse fascia, or, rather, two spots united by a slender line; the humeral spot, however, is much larger and rounder. The under-surface, legs, and palpi are dark blue, with green tinge.

Interior of Northern Borneo (Lieut. De Crespigny).

## AMAROTYPUS, nov. gen.

### Sub-family MIGADOPINÆ.

*Corpore ovato Gen. Amaram simulans. Antennæ articulis* 4 *basalibus glabris. Caput postice crassum, retractum, oculis haud prominulis. Mentum breve, leviter emarginatum, dente mediano brevi, bifido. Palpi breves, robusti, articulis ultimis elongato-ovatis, ad apicem sub-acuminatis, leviter oblique truncatis. Prosternum obtusum, haud porrectum. Epimera metasterni nulla. Tarsorum maris articuli basales* 4 *pedum quatuor anteriorum dilatati, subtus spongiosi, articulo quarto æqualiter bi-lobato.*

The strange little Carabid forming this genus is distinguished from the allied genera *Migadops*, *Brachycœlus*, *Loxomerus*, &c., by the four dilated tarsal joints of the anterior and middle legs, and by the equality of the lobes of the fourth joint. The species resembles an *Amara* to deception, and forms an interesting addition to the Antarctic group *Migadopinæ*, allied to our northern *Nebrianæ*, but differing from them in facies, and in the middle tarsi being generally dilated. In form, *Amarotypus* resembles *Systolosoma*, but the hind coxæ do not reach the side of the body, as in that still more anomalous genus.

AMAROTYPUS EDWARDSII, n. sp.

*Ovatus, cupreo-fuscus, nitidus, antennis pedibusque rufo-piceis, palpis flavo-testaceis; elytris seriato-punctatis.* *Long.* 3 *lin.* ♂ ♀.

Of similar ovate form to *Amara plebeja;* dark pitchy-brown, with a uniform coppery-æneous tinge above; shining. The head is very similar to that of *Rhytidognathus ovalis*, being *widened* behind the eyes; the forehead is, however, a little dilated, and projects over the base of the antennæ. The palpi are short, as in *Brachycœlus;* the terminal joints are thick and appear pointed, but the points are the upper ends of an oblique truncature, visible only in certain positions. The thorax widens from front to back, and at the base is quite as wide as the elytra: it is convex, slightly wrinkled and impunctate, and has, near the hind angles, two oblong foveæ; the exterior one very narrow and scarcely visible, near the angle, and the interior one much more conspicuous, at some distance from the other. The elytra are rounded and entire behind; they have each nine rows of short, linear, sharply-cut punctures, the marginal row not much more impressed than the others; there is no trace of striæ, and the interstices are somewhat uneven. The anterior tibiæ have a deep notch before the apex, with one spur above the notch and one at the apex. In the ♂ the anterior tarsi are more widely dilated than the middle pair; the 4th joint is nearly as wide as the others, and its lobes are short and equal.

Found in New Zealand by Mr. H. Edwards (now of St. Francisco), who kindly sent me three examples.

NEBRIA MANDIBULARIS, n. sp.

*Elongato-oblonga, parallela, nigra; capite grossissimo, mandibulis maxime elongatis; thorace magno, quadrato; elytris elongatis, parallelis, sub-punctato-striatis.* *Long.* 9 *lin.* ♂.

Quite unlike any other known species; the thorax resembling that of many *Carabi* in its square form and broadly-produced hind angles. The whole body is nearly the same in breadth from the middle of the head to near the apex of the elytra, and is of a shining black colour throughout. The head, as in the group to which *N. Marschallii* and *Fischeri* belong, is not narrowed behind the scarcely-prominent eyes. The mandibles (especially the sinistral) are greatly elongated and bent at the tip. The tooth of the mentum is strongly bidentate. The thorax is quadrangular, broader than long, with moderately prominent and acute anterior angles, and broadly-produced but obtuse hind angles; it is slightly narrowed behind the middle, widening again before the base; the middle of the base is broadly sinuated; the surface is very finely punctulate and wrinkled, and the lateral margins moderately dilated and reflexed. The elytra are elongate-oblong, nearly parallel-sided, with rectangular shoulders, and sharp but fine striæ, minutely punctulated. As in *N. intricata*, *Mniszechii*, and allied species, the apex of the elytra has a short ridge with groove on each side. The whole insect is of a deep, shining black.

One example, from a collection made in Northern Persia, Kurdistan, and Mesopotamia.

NEBRIA CHINENSIS, n. sp.

*Elongata, piceo-nigra, antennis, palpis pedibusque rufo-piceis; capite parvo, oculis valde prominentibus; thorace transversim quadrato, postice gradatim leviter angustato; elytris oblongo-parallelis, acute punctato-striatis, interstitiis omnino crebre punctulatis,* 3$^{io}$ *4-punctato.*

*Long.* 6½ *lin.* ♂.

A very distinct species, belonging to the *N. brevicollis* group; more elongate than *brevicollis*, and distinguished by the punctulate elytra. The head is sparsely punctulate, with very projecting eyes. The thorax resembles that of *N. brevicollis*, except that the sides have no trace of sinuation, and the hind angles are not at all produced; they form in fact an obtuse angle, with a small, sharp tooth at the apex; the surface is thickly rugose punctate, except on the convex disc, which is very minutely strigose and glossy. The elytra are more elongated, the striæ sharp, like fine grooves, with minute, regular punctures. The shoulders are rounded, and the basal fold does not project as a tooth. The legs are pitchy-red, becoming blackish on tarsi and outside of tibiæ.

Taken on the Yang-tsze Kiang, in Sze-chuen, by Mr. Consul Swinhoe.

Kentish Town: *July*, 1872.

# ON A NEW SPECIES OF *NEOLUCANUS* FROM NORTHERN INDIA.

BY CHAS. O. WATERHOUSE.

The insect which I am about to describe has been for a long time standing in the British Museum Collection as a new species of *Odontolabis*. M. Henri Deyrolle, on his last visit to England, pointed out that it was a *Neolucanus;* of which genus it is apparently an undescribed species, allied to *N. cingulatus*, differing especially in being more depressed, and scarcely visibly punctured on the thorax and elytra.

### NEOLUCANUS MARGINATUS, *sp. n.*

♀. *Piceo-niger, sat depressus; capite thoraceque opacis; elytris sub-nitidis, subtilissime punctulatis, nigro-piceis, singulis vittâ magnâ sub-marginali flavâ ornatis. Gula impunctata. Tibiis anticis tridenticulatis; tibiis posticis extus quadri-sulcatis (sulcis fortiter punctatis), intus punctorum seriebus duabus impressis. Abdomine lateribus apiceque punctulatis, medio lævi.* *Long.* 18 *lin.*, *lat.* 8½ *lin.*

Pitchy-black, with the sides of the thorax pitchy. Elytra pitchy-black, each elytron with a broad ochraceous stripe extending from the shoulder almost to the apex; this stripe is narrow at the shoulder, then somewhat suddenly widens, and remains of an equal breadth for about half of its whole length, and then gradually narrows to the apex, thus leaving the elytra narrowly bordered with black, and with a somewhat triangular patch of the same colour covering the disc; the suture is pitchy.

The anterior tibiæ are furnished on the outer edge with three sharp teeth, and the apex is bifurcate. The posterior tibiæ are longitudinally canaliculate, the channels are four in number on the outer side, deeply and closely punctured; on the inner or under-side there are two longitudinal rows of deep punctures, one of them forming a slight channel at the base; the space between this row and the channel next to it of the four above mentioned is very convex, and has only four or five punctures; in the second row the punctures are separated from each other; the space between these two rows is convex and impunctate. The head is sparingly but deeply punctured on the under-side between the eye and the gula, the gula itself is very shining, with scarcely any visible punctures. The abdomen has the sides and apical segment punctured, the central part smooth, with a few minute punctures visible with a magnifying power.

*Habitat:* Northern India. British Museum.

This insect most nearly resembles *N. cingulatus*, from which it may be distinguished by being less convex and proportionately longer. The thorax is dull, without admixture of large punctures on the surface, except a few indistinct ones on the disc; whereas, the whole surface of the thorax in *N. cingulatus* is thickly punctured on the dull ground; the elytra are also more distinctly but finely punctured in *N. cingulatus*. The gula in *N. cingulatus* is moderately thickly but strongly punctured, and the abdomen is visibly but finely punctured in the central part. The anterior tibiæ are furnished with four sharp teeth; the posterior tibiæ in *N. cingulatus* are furnished with two longitudinal channels on the under or inner side, the space between them being furnished with about five punctures at the apex, and the space between the outer of these two channels and the innermost of the four channels on the outer side of the tibiæ is furnished with a row of large oblong, semi-confluent punctures.

There is an insect in the British Museum Collection which may prove to be the male (*var. minor*) of the above; but there is little more than the fact of their having come in the same collection (with other *Neolucani*) to lead to this conclusion. It appears, however, to be quite distinct from *N. Baladeva*, having nearly the whole of the thorax and elytra castaneous. It is much less convex than *N. Baladeva;* the canthus of the eye is more prominent and acutely angular, and the head is more suddenly contracted behind the eyes. The thorax is broader posteriorly, and the sides are less rounded, with the margins more flattened.

British Museum: *July* 17*th*, 1872.

## NOTES ON THE BREEDING OF *ANTISPILA RIVILLEI.*

BY H. T. STAINTON, F.R.S.

From the larvæ of this insect, collected on the vines at Massa di Carrara by the Hon. Beatrice de Grey, last October, I have now reared ten specimens of the perfect insect.

It will frequently happen that that to which we have looked forward most eagerly, and from which we have anticipated a great amount of pleasure, will be found, when actually attained, a source rather of discomfort than happiness; and so it has certainly been with me in the case of this *Antispila*.

Never before have I known what it was to dread to have to pin and set a moth. All things are supposed to become easier with practice, but either that is not the case with the pinning and setting of *Antispila Rivillei*, or the nine specimens already manipulated have not afforded me a sufficient amount of practice.

In the first place the insect is *so small;* whereas my smallest *Antispila Treitchskiella* expands fully three lines, my largest *A. Rivillei* is little over two lines, and the smaller specimens are considerably under two lines; indeed, one specimen appears to be smaller than a *Nepticula microtheriella*, which I have placed beside it.

In the second place the insect is *so glossy*, that it has a tendency to slip about, and the normal position of the wings render it far more difficult to pin than a *Nepticula*, which lies flat, besides having the advantage of being roughly scaled.

Hence, whereas I have always hitherto considered that the pinning and setting out nicely of a small *Nepticula* was the *ne plus ultra* of a Micro-Lepidopterist (how often have I used the phrase in speaking of a Micro-Lepidopterist, "Oh! he can set *Nepticulæ!*"), I have to admit now that a far severer test is afforded by the *small, glossy, Antispila Rivillei.*

When I stumbled over the first specimen, I thought the difficulty arose from my own nervousness, at having before me an insect which had not been seen for 120 years, and which might, perhaps, be the only specimen which I should breed; but when, after breeding a few more single specimens, three specimens appeared simultaneously, and my difficulty in pinning the creature still continued, either my nervousness was extremely obstinate, or the insect really did present some unusual difficulties.

The head (where visible, for many of my specimens are pinned *through the head)* and face are silvery; the antennæ dark fuscous, annulated with whitish, little more than one-third the length of the anterior wings.

The anterior wings are glossy brown-black, with four bright silvery spots, two on the inner margin, and two on the costa; the dorsal spots are placed anterior to the costal spots, and are both nearly triangular, the second one being the largest; the first costal spot is triangular, but very small, being the smallest of the four spots (I apprehend it extends little beyond the sub-costal nervure); the second costal spot has its hinder margin rather hollowed or curved. The tips of the cilia are whitish.

The position of the spots is well shown in fig. 4 of the frontispiece to the 'Tineina of Southern Europe,' only there the relative sizes of the two costal spots are transposed. This figure of course is magnified, and is so stated to be by M. de Riville; but the cases were, I believe, intended by him to represent the natural size of his cases, and they are very much larger than those of the insect I have been rearing—they are larger than my cases of *Antispila Treitschkiella.* Hence I cannot help entertaining a somewhat uneasy feeling that possibly there may be another vine-feeding species of this genus in southern Italy. It is even possible that that might be the veritable *Rivillei*, and the insect I have been now noticing a species totally hitherto unknown, which has been found in the search for "the lost Pleiad."

Did not Columbus by going westward in order to reach China discover America? The search for the known often results in the finding of the unknown.

The first imago of *A. Rivillei* appeared on the 23rd May; another appeared on the 2nd June, and another the following day; another specimen appeared on the 10th June; on the 14th three appeared (on the 21st June I left home for a fortnight, and put all my pupæ in a cool place till my return on the 5th July); another appeared on the 6th and another on the 7th July (but strange to relate, *both* these were injured in boxing; their remains, however, I have carefully pinned); another specimen appeared on the 16th July and is still living, waiting till I can screw up my courage again to grapple with so great a difficulty as the pinning and setting of *Antispila Rivillei.*

Mountsfield, Lewisham: *July 18th*, 1872.

## NATURAL HISTORY OF *TRIPHÆNA SUBSEQUA.*

### BY WILLIAM BUCKLER.

On September 6th, 1871, Mr. George Norman, of Forres, most kindly sent me some eggs laid by a female of this species. The larvæ began to hatch on the evening of the 13th; on the 23rd they moulted; by October 14th they were five-twelfths of in inch in length, and growing fast, so that by the 20th they were five-eighths of an inch long; after this, most of them ceased feeding for hibernation, but some went on till full growth, moulting for the last time during the latter part of November, becoming full-fed from the 16th to 27th of December, and pupating shortly after. The hibernating larvæ did well enough whilst the weather was mild, and fed a little, and got through a moult in January, 1872; but, on the 29th of that month, a severe frost killed most of them, and the survivors perished in a similar way on February 21st.

I sent some eggs to Mr. Hellins, who managed to bring three larvæ through hibernation, keeping them in a cucumber frame without bottom heat; but he bred only one moth (June 12th), the pupa state having lasted four or five weeks.

The food the larvæ chose at first was cowslip, garden riband grass, and *Ranunculus acris;* after a time they seemed to prefer *Potentilla reptans* and *Ranunculus repens*, and on this last they fed up; Mr. Hellins tells me his larvæ stuck to the riband grass throughout.

The egg, as with other species of this genus, was small, somewhat globular, but rather flattened above; the shell glistening, with thirty blunt ribs, and faint reticulations; the colour at first dirty white, and in four days there appeared a greyish-brown blotch on the apex, and a zone of irregular blotches round the middle; just before hatching, the colour was pale grey.

The young larvæ were at first of a semi-pellucid greenish-grey colour, with a brown head, and an internal brownish-green vessel, all the usual warts very conspicuous, and bearing each a bristle. In ten days they had moulted into opaque, brownish-grey coats, having a stripe of cream colour above the legs: at their next moult, when from three to four lines long, they were of similar colour, the dorsal and sub-dorsal lines becoming faintly visible, the former as a pale thread running down the centre of a brown stripe, the latter as a fine line rather paler than the ground, and edged above with a thread of darker; the lower stripe above the legs much paler than the ground colour. In three weeks more they were five lines in length, and stouter in proportion than before, and now showed the dorsal stripe white running uninterruptedly through oval shapes of brownish-grey, darker than the ground colour, the sub-dorsal stripe as before, and the pale sub-spiracular stripe having a fine line of white on its upper edge. These details, even at this early stage, effectually distinguish this species from either of its congeners. Another week of growth brought them up to five-eighths of an inch in length, and they were now generally of a little deeper tint of greyish-brown, the dorsal white stripe still the distinct character, running now through elongated diamond shapes, darker than the ground colour; the sub-dorsal stripe a little less white, with a series of oblong black dashes along its upper margin; just before the last moult the whitish stripes assumed an ochreous-yellow tint, and the whole ornamentation generally came very near to the appearance of the full-grown stage—now to be described.

The full-grown larva is 1⅛ to 1⅜ inches in length, of stout proportions, cylindrical, and of tolerably uniform bulk throughout, tapering a little from the fifth segment to the head, which is a trifle the smallest; and the thirteenth segment tapers also a little, and is rounded off behind; the segmental divisions are slightly indented; the smooth skin has a velvety appearance. The ground colour is greyish-brown or pale drab; on the back of each segment is a much darker and rather olive-tinted mark of a diamond shape, with the points truncated; through the middle of this row of diamonds runs the very conspicuously wide dorsal stripe of bright ochreous-yellow, which, at each end of the body, becomes narrower, and is relieved throughout by a very fine black edging; sometimes a faint cloud of greyish appears in the middle of this dorsal stripe, but this is oftener met with in the earlier stages; the sub-dorsal stripe is almost as wide as the dorsal, but is rather more of a greyish-yellow, and clouded faintly with greyish along the middle, and it is well relieved on its upper and lower edges by a thin darker line; close along the upper edge, in contact with it, is a series of oblong, square black marks, each mark situated on the anterior portion of a segment, those on the third and fourth segments being narrower than the rest and rather wedge-shaped, that on the twelfth extending the whole length of the segment; the tubercular marks on the back are black, and three on either side of the dorsal stripe in each segment and in the post-thoracic segments are thus arranged:—the middle one of each three is seen as a dot, sometimes faintly confluent longitudinally, and the other two are merged within transverse narrow bars of black, the one in front at the segmental division, the other behind the square black mark previously mentioned, only the slenderest interval of the pale ground colour separating them; adjacent on the back, near the segmental divisions, are a few fine longitudinal streaks of greyish yellow: the ground colour of the side, as far as the spiracles, is the same as that of the back, with a darker longitudinal stripe running midway through it, more strongly tinged with darker brown at the beginning of each segment; the very broad sub-spiracular stripe is pale ochreous at its upper and lower edges, rather greyish-ochreous along the middle, bearing a couple of brown freckles on most of the segments; the upper edge of this stripe is well defined by a very fine brown line, on which are the spiracles, small and white, either simply outlined with black, or placed in fusiform black blotches, which gradually increase in size to the twelfth segment; the belly has a faint, indistinct, central, paler longitudinal line, and a few freckles of the same paler tint, but its general colour, as well as that of the legs, is a little deeper in tint than the sub-spiracular stripe; the ventral legs bear a couple of small brown dots, and are tipped with hooks of the same colour; the head is brownish-grey, freckled with dark brown, and marked down the front of each lobe with a black wedge-shaped mark, pointing to each side of the mouth; the sides of the head bear also a black streak.

It will thus be seen that this larva is a much handsomer creature than either of its congeners in this country, and abundantly distinct from them.

The pupa-state was assumed at a slight depth below the surface of the soil, and there seemed to be little appearance of any cocoon or chamber; the pupa was full and rounded in figure, the skin being thin and of a bright red colour.

Emsworth: *July*, 1872.

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*Ravages of Anobium.*—The floor of an upper room at Mr. Van Voorst's, our worthy publisher, Paternoster Row, upon which part of his stock of works in sheets has been placed for security, is riddled by *Anobium striatum*, Ol., which, in its efforts to publish itself to the world, has penetrated a layer of half-an-inch of paper (5 quires deep, with strong outer wrapper). A good soaking with boiling water containing carbolic acid may, perhaps, suppress further editions of the beetle; and the stock could with benefit be placed on tin plates, though even the metallic intervention might not prove effectual, as I have known *A. tessellatum* bore clean through leaden roofing under similar conditions. I remember finding *A. striatum* (which, in the present instance, exhibits a great lack of *esprit de corps* in attacking a natural-history book publisher) in multitudes, quietly converting into the resemblance of a cullender bottom the superficies of an elegant sideboard in a friend's house, bought as solid mahogany, but really made of British wood with a thin veneer, the white dust of the native fibre pouring through the neat drill holes on to the carpet. My friend Dr. T. Algernon Chapman once sent me vast quantities of ivy stems from Abergavenny, peopled with this beetle, among others of greater value: these stems I kept in an unoccupied bed-room, collecting the last-mentioned species from day to day on the windows and walls, and thoughtlessly leaving the *Anobium*, the numbers whereof were enormous. I have since moved from that house, and can only hope my late landlord will not peruse these lines, lest the idea of an action for dilapidations should occur to his mind.—E. C. Rye, 10, Lower Park Field, Putney, S.W.: *July*, 1872.

*Note on Lamprias (Lebia) chrysocephalus, Motsch.*—Baron Chaudoir (Bull. de la Soc. Imp. des Nat. de Moscou, xliii, pt. 2, p. 137), who has just completed his monograph of the *Lebiades*, sinks Motschoulsky's insect above named as a var. of *chlorocephalus*, which he (Chaudoir) states to occur in the south and west of France, and to be smaller than the type, with the elytra proportionally more abbreviated, and the thorax generally less transverse. This is evidently the same insect as that referred by me to Motschoulsky's *chrysocephalus* from Shirley, in Ent. Mo. Mag., iv (1868), p. 190.—Id.

*Note on Ilybius æneseens, Thoms.*—Like my friend, Mr. E. C. Rye (Ent. Mo. Mag., ix, p. 36), I am inclined to refer my supposed specimens of *I. angustior* to this species. I have examples from the south of Scotland, the Cheviot district, East Cumberland, and from the south of England. All have the antennæ totally red, and are evidently of one species; but in no instance do I detect Herr Thomson's sexual chararcter of "*Mas.: pedum intermediorum unguiculo postico basi subtus sinuato*" (Opusc. p. 125).—THOS. JNO. BOLD, Long Benton, Newcastle-on-Tyne: *July*, 1872.

*Note on Ocypus morio, Auct.*—I have long had in my collection one of those small specimens of *Ocypus morio* mentioned by Mr. Rye on the above page, and which was taken near Hartlepool, Co. Durham, in October. Placed alongside of ordinary *morio*, of equal size, the difference in appearance is so great that it is very difficult to believe them to be of one species; but, having only one example of the smaller race, I will content myself with pointing out how it differs from the typical form. Agreeing generally with the characters pointed out by Mr. Rye, this individual has its head nearly quadrate, the greatest width being behind (not nearly orbiculate, with the greatest width immediately behind the eyes, as in *morio*); the eye is much larger in proportion to the size of the head, and more upright; the elytra are proportionately larger, browner in colour, with the apices less oblique and more rounded; the abdomen has its intermediate segments less dilated, whilst the legs are more sparingly covered with pubescence, with the tibiæ much less strongly spinose.—ID.

*The sound produced by Pelobius Hermanni.*—On this subject, a friend writes as follows:—"Of the beetles, popularly known as 'screech-beetles,' I have several in "my aquarium, which contains more than 20 gallons of water, and I have heard the "peculiar noise from which the name is derived emitted when two beetles were "quarrelling for a piece of worm. I think the noise came from two at the bottom, "but as several couples were quarrelling at the time, it might have proceeded from a "couple nearer the top."—J. W. DOUGLAS, Lee: 15*th June*, 1872.

*Note on the oviposition of Chrysopa.*—A fortnight ago, at nine o'clock in the evening, I saw a *Chrysopa* leave a broom tree in the garden here. After capturing and examining it to make sure of the genus, I gave it back its liberty, but thought it strange at the time that *Chrysopa* was to be seen on the wing so late.

Yesterday, while examining the same tree again, I found several of the branches thickly covered with hosts of mostly apterous slate-coloured *Aphidæ*. Between them, I noticed the well known eggs on long stalks of a *Chrysopa*, and it strikes me now that I must have interrupted the ♀ insect while depositing her eggs. In most cases, the pedunculate eggs were fixed by minute, white, flat discs to the stem of the plant, as could be ascertained by gently pulling them off; but, finding some of the eggs moving rather suspiciously, I examined their position closely, when it appeared that several were fixed by their basis to the backs of full-grown *Aphidæ*.

I have now two such creatures walking about before me, each carrying the *pedunculated egg of its enemy*. In the eggs fixed to the stem of the broom the *stalks are of uniform thickness*, and quite white; but, in the case of those fixed to the

*Aphidæ*, the lower part of the stems is somewhat discoloured, and at the same time thicker than the upper part of the peduncle. Perhaps the kicking of the *Aphis* during the implanting of the egg has something to do with this inequality in its thread-like stem.

Some of the eggs have already hatched, and it is very interesting to see the voracious-looking larvæ, with their enormous mandibles, slowly move among their victims. I find these young *Chrysopa* larvæ carry their heavy hind-body in an upright crooked manner, that is to say, they use the last segment as a kind of rest and propeller for the others. They make no attempt at present to leave the branches on which they were born, although very active in their movements.

July 16th, 9 p.m.—I have just watched another specimen of the same *Chrysopa* depositing three eggs on the same plant. The insect, while laying, clings in an inverted position by her legs to a slender branch, with the abdomen along the branch and the folded wings directed downwards. As it is getting too dark for out-of-door observation, I have captured the insect, and, taking her in-doors, have just confined her in a glass-topped box, where she is now laying her eggs under my eyes, by attaching the stalks to the top of the box. With the aid of Mr. M'Lachlan's Monograph, I find that it is *Chrysopa septempunctata*, Wesmael. A very disagreeable experience indeed, enables me to bear out my friend's statement that this creature is "especially entitled to the appellation of 'stink-fly.'" The smell is really so disgusting, that were it not that I wanted to observe the oviposition closely, I should have flung the creature away immediately. If this odour be not protective against man and beast, I shall cease to believe in the efficacy of smells altogether. It is now a quarter-past nine: the *Chrysopa* has laid fifteen eggs since I placed her in the box. Her proceeding in egg-laying is as follows :—before the operation commences, a slight but very distinctive twisting of the segments of the abdomen is perceptible, as if to get certain internal organs and their contents into the most suitable position. Of course, this is a mere supposition of mine, but I cannot help mentioning it. The insect then slowly curves the hind-body upwards till the external part of the oviduct touches the glass. At this moment, a small drop of viscid liquid appears at the outlet of the oviduct ; this drop is brought into slight contact with the glass, the body is then gently, but with extreme steadiness, withdrawn to a distance of exactly seven millimètres, and remains connected by a semi-transparent thread of the gummy liquid to the glass. One end of the oval pale green egg now appears to stop up the oviduct, and is seen to join the end of the viscid thread. The abdomen is now again gently moved to the distance of half a millimètre, by which movement the full half of the egg becomes visible. At this juncture, all movement ceases for five or six seconds, and the half of the egg is seen to be tightly held by the aperture of the oviduct, while the hind-body itself seems to stiffen in a most singular fashion. No one who has not seen this sudden change from gentle movement into the most absolute steadiness and repose, can have a correct idea of the process. It is as if all the insect's will had been brought into play to maintain the utmost steadiness of the whole body ; even the movements of the antennæ and palpi have ceased, as if the insect feared lest some mishap might disturb the consolidation of the thread and its safe connection with the egg. After the time mentioned, the other half of the egg gently slides out of the oviduct, and the *Chrysopa* finally gets rid of it with a slight jerk. The egg itself is a millimètre in length, and of an oval, elongate shape ; in colour, it is of a lively pale green. The pedicle is now stiff enough to support the egg without much bending. After depositing one ovum, the ♀ simply moves forward a few steps and repeats the operation. The ova in the box are fixed in four nearly straight rows, but this arrangement is to be attributed to the artificial nature of the surface presented; on the broom they are ranged in one row along the twigs. The insect is very neat in its ways, continually cleaning its antennæ and feet, by passing the former through the claws of the fore-feet and the three pairs of feet through its palpi. Having accidentally hurt one of her hind legs, the *Chrysopa* has brought it forward to her mouth and licked it, as a cat would lick its paw under similar circumstances.

July 17th. 8.15 p.m.

A batch of *Chrysopa* eggs from the same bush is now hatching under my eyes. The mature egg is pale fuscous; the young larvæ force their way out of the soft, transparent, white egg-skin with the head foremost, till the whole body is liberated, when they remain suspended by the last abdominal segment with the head downwards. Their bodies are now pale fuscous, their mandibles and legs transparent, and they are covered with long, stiff, isolated, curved hairs. After a few minutes, the last few abdominal segments are suddenly curved upwards, till the larva is able to clasp the empty egg-skin with its legs. In this position, it rests again for a little while with the last abdominal segment still in the egg-skin; subsequently, the terminal segment is withdrawn finally from the egg-skin, and the larva again rests. The relative position of the resting larva to the deserted egg may be compared to the letter O; one side of the letter to represent the larva, and the other side the egg-skin. The hind-body of the larva at this stage is very elongate, and in a resting position is still kept bent round the basal part of the egg, without, however, touching the latter, the larva being kept in position by clasping the circumference of the egg with its limbs. After thus resting, it ascends the egg and begins to climb up the stalk by holding on with the feet only, but using the hind-body occasionally both as "balançoire" and as propeller, as circumstances may require. Once on the plant, it is as nimble and active as if it had been on its legs for a long time, instead of just having quitted the egg. When fully stretched out, it is 2½ millimètres in length, the head broader than the next segment, the remainder of the segments gradually tapering towards the last. Colour of the head dark fuscous, nearly black and polished; body many shades lighter, of a dirty fuscous hue. It is singular that, although the head itself is very dark, the formidable, crooked mandibles it carries are still almost transparent. These young larvæ are full of slow play, if I may use such a paradoxical expression. They amuse themselves by ascending and climbing down the deserted egg-stalks, and, in short, act exactly like so many little bears, which mammal they also superficially resemble in their hairy coats, and their manner of slow, deliberate climbing with outstretched limbs.—ALBERT MÜLLER, South Norwood, S.E.: *17th July*, 1872.

*Occurrence of Sisyra Dalii, McLach., in abundance.*—On the 5th inst.—one of the hottest days this year—I proceeded to the banks of the Mole beyond Reigate, at the spot where, in 1866, I took a few specimens of *Sisyra Dalii*, and found the insect in great abundance, though, owing to the intense heat, many of them were dead and broken before I got home. *S. terminalis*, which on my former visit was extremely common, was present in only one example. The almost ubiquitous *S. fuscata* was not seen.

*S. Dalii* has not yet been found out of Britain; but *S. terminalis* is recorded as occurring in Sweden, and I have received indications that it is also found in Germany.—R. M'LACHLAN, Lewisham: *8th July*, 1872.

*An addition to the list of British Psocidæ (Stenopsocus stigmaticus, Imhoff and Labram).*—At the time and place mentioned in the preceding note, I captured 15 examples of *Stenopsocus stigmaticus*, described and figured by Imhoff and Labram in their 'Insekten der Schweiz.' This was almost the only described European species of winged *Psocidæ* that had not occurred in Britain when I wrote my Monograph of the British species of the family, and I was not then fully acquainted with it, and had not seen the original description and figure (*cf.* Ent. Mo. Mag., vol. iii, p. 245). Since then, I have received numerous examples from Herr Meyer-Dür from Bürgdorf in Switzerland, and from Belgium, and I possess it also from Germany, from an uncertain locality. Hagen considers the species identical with the insect described by Fabricius in his 'Systema Entomologiæ' as *Hemerobius striatulus* (*cf.* Stettiner ent. Zeit. 1866, p. 170), but it seems to me that the description is by no means sufficiently exact to identify the species, and I therefore have not adopted Fabricius's name. The insect may be described as follows:—

*Antennæ* slightly longer than the wings, black, the two basal joints yellow. The whole body is of a beautiful pea-green, when alive, with black markings, changing to yellowish-green soon after death. *Nasus* fuscescent or blackish (less decidedly so in the ♂), and generally with the ocelli surrounded by blackish. *Thorax* almost entirely blackish above, the sutures between the lobes remaining green. *Abdomen* slightly blackish at base and apex; towards the apex is a ring of yellow, occupying a segment, scarcely evident in the living insect, but becoming very conspicuous after death, especially in the ♀. *Legs* greenish, the tarsi and (in the ♂) the apical portion of the tibiæ, fuscescent; sometimes only the apical joint of the tarsi is fuscescent. *Wings* hyaline; *veins* strong, almost entirely blackish; the vein under the pterostigma in the anterior wings, from its apex to the point where it emits the transverse veinlet, *much thickened and conspicuously black* (especially in the ♀), a character partaken of in a lesser degree by the transverse veinlet itself: *pterostigma* bright yellow, much angulated at the point where is emits the transverse veinlet. Expanse of wings 4 lin.

Closely allied to the common *S. immaculatus*, Stephens. Distinguished therefrom by its slightly smaller size, the much brighter green of the body, the brighter yellow of the pterostigma, the form of this latter (which in *immaculatus* is not at all, or scarcely, angulate at the point where it emits the transverse veinlet), and especially by the conspicuously thickened black nervure which bounds the pterostigma at its lower edge.

My examples were taken from a mixed hedge consisting of hazel, hawthorn, oak, buckthorn, &c., and I was not able to satisfy myself that the species was attracted to any one of these in particular. I had long felt sure that it would occur in Britain, and no doubt it exists in many localities. The Ceylonese *S. uniformis*, Hagen, is a very closely allied species.

It may here be mentioned, that of *Cæcilius Dalii*, which had only occurred in England (in Mr. Dale's garden at Sherborne), I possess an example found by Mr. Stainton among leaves of *Cratægus pyracantha*, mined by a micro-lepidopterous larva, brought by him from Florence. Thus Dorsetshire and Florence are its only known localities, excepting a doubtful specimen found in a hot-house in Belgium.—Id.

*Description of the larva of Dianthœcia cæsia.*—Towards the end of June, 1867, I received two small larvæ of this species, scarcely half-an-inch long, from Mr. C. Gregson, who sent with them a couple of flowers and a leaf or two of *Silene maritima*, and instructions to feed them on the flowers and leaves of that plant. Perhaps for want of sufficient air in their small box during the journey in hot weather, one arrived in a dying state, and though much attention was paid to the survivor, that also soon sickened and died.

I noted that this little larva was of a grey colour, marked with a series of dorsal diamonds of a darker brownish-grey, and the sides of the same brownish-grey, and the tubercular dots distinct as dark rings.

The next and only subsequent opportunity for studying this larva was generously afforded me by Mrs. Hutchinson of Leominster, who, knowing *cæsia* (at that time a comparatively recent addition to our list) was still one of my desiderata, very kindly sent me, on July 23rd, 1869, some examples of larvæ which her son, Mr. Thomas Hutchinson, had recently found on *Silene maritima* in the Isle of Man, in the hope that I might find that species amongst them; nor, indeed, was this a forlorn hope, for on looking over the larvæ—mostly familiar enough—I detected one which at once recalled to mind the *cæsia* of 1867. This I kept apart, and carefully tended with seeds of both *Silene maritima* and *inflata*, and it appeared to feed very well on both, without any apparent preference. At its arrival, it was about five-eighths of an inch in length, by the 31st it had increased to an inch, and by August 9th to one inch and a quarter, perhaps even a little more when thoroughly stretched out; it continued to feed for a day or two longer, and retired into the soil on the 13th for pupation.

Having but this one, I did not interfere with it to take notes of the pupa, lest I might by some some accident destroy the chance of breeding the perfect insect, and so lose the opportunity for proving the figures taken of the larva were rightly named. Fortunately, the moth, a fine example, appeared on July 15th, 1870, evidently later than its parents had flown in their native haunts.

In several of the *Dianthœciæ*, we are familiar with variations of the chevron pattern, but from all its congeners, *cæsia* is strikingly distinguished by these diamond shapes of freckles, as well as by the absence of positive outlines in the sub-dorsal and spiracular regions. The description given above of the larva of 1867 suits every subsequent stage up to full growth.

The full-grown larva was cylindrical, of moderate stoutness and about equal bulk throughout; the head rounded, and the anal segment only slightly tapered, and rounded off; the segments and sub-divisions very well defined. The ground colour on the back was pale greyish-ochreous, that of the sides, belly, and legs similar, but a little more ochreous-brown, and deeper: on each segment, and co-extensive with it in length and in breadth, extending to the sub-dorsal region, was a diamond shaped mark, composed of dark grey-brown freckles thickly aggregated together; a broad band of similar freckling commenced along the sub-dorsal region and terminated rather below the spiracles; other freckles, fainter and farther apart, were low on the sides, disappearing gradually towards the legs, which were tipped with broad hooks; the head shining reddish-brown, the plate on the second segment was rather shining reddish grey-brown, and had a broad dark brown margin in front: the tubercular dots were whitish centres in rings of dark grey-brown, arranged in threes on either side the back of each segment; others, whose place was within the side band of freckles, were of the ground colour; the spiracles pale brown, outlined with black: just at the last, when the larva was in its plumpest condition, the last three segments appeared to taper a little.

There was a faint indication at first of a dorsal line or thread of pale ground colour enclosed within two dark grey-brown ones, but not very visible beyond the thoracic segments, excepting just at the segmental divisions.—WM. BUCKLER, Emsworth: *July*, 1872.

*Description of the larva of Eupithecia pygmæata.*—Long, very slender, and tapering extremely on the capital segments. Ground colour pale, dull, yellowish-green. Central dorsal line pale olive, connecting a series of very distinct, well-defined, urn-shaped blotches of the same colour, which become confluent on the capital and anal segments. Sub-dorsal and spiracular lines pale olive, sinuous, distinct, and rather broad. Belly without markings. Skin rough and rugose, freely studded with short, whitish hairs. In form and general appearance comes next to the larva of *Eup. pulchellata*. Feeds on petals and anthers of *Stellaria holostea*. Full-fed June 20th.

I am indebted to the kindness of Mr. Hodgkinson of Preston, and Mr. Hellins of Exeter, for the opportunity of describing this interesting and almost unknown larva. The former gentleman took a ♀ moth on May 25th. She deposited three eggs on a daisy flower, which, together with the parent insect, he forwarded to Mr. Hellins. The eggs hatched June 2nd.

Mr. Hellins kindly sent me a larva on the eve of its last moult. I had no *Stellaria holostea* within easy reach, but found it feed freely on petals and stamens of *Cerastium tomentosum*.

Mr. Buckler has secured several life-like portraits of the interesting little stranger.—H. HARPUR-CREWE, The Rectory, Drayton-Beauchamp, Tring: *June 21st*, 1872.

*Note on the habits of Eupithecia subciliata.*—As a contribution to the history of *E. subciliata*, I send you my short experience of the larva. I took it abundantly in two or three localities in this neighbourhood, which forms part of what is termed by Mr. Barrett the "Breck"-sand of Norfolk. It fell easily to the stroke, from maple in full blossom; so easily, that I judged it was feeding on the blossom. On perusing Mr. Crewe's description of the larva, I thought it faulty in making it of uniform bulk, for I readily distinguished it in the umbrella from other small green larvæ as well from its segmental divisions being somewhat darker as from it being plumped out in the middle, and slightly tapering towards the extremities. This alteration in bulk, Mr. Buckler informs me, does not take place till just previous to changing, when the colour of some of its markings change to a pinkish-brown, and this was just the stage in which I discovered it. I failed to beat it from any but trees in blossom, and most abundantly from stunted sickly trees with spare foliage, but abundant blossom, growing as underwood in a very poor, sandy soil.—H. Williams, Croxton, Thetford: *4th July*, 1872.

*Does Orthosia ypsilon hibernate as egg or larva?*—A general conviction seems to have settled on the minds of Lepidopterists that the eggs of this species hatch in the summer or autumn, and that the larvæ hibernate; and, until the spring of last year, scarcely a doubt of the correctness of this supposition had crossed my mind. I had repeatedly found dozens of the larvæ half-an-inch to an inch in length under the loose bark of old willows, where a week or two previously scarcely one could be found; and as they could not have grown to this size in so short a time, thought they must hibernate, and when searched for before had not yet bestirred themselves, In the spring of last year, however, I found some very small larvæ spun up in young willow leaves, and this spring some similarly small larvæ accidentally got into one of my cages from poplar, brought in as food for another species. Does it not seem that the eggs hatch in spring just when the willows and poplars come into leaf, and that the larvæ, until they have attained some size, live in spun-up leaves, afterwards hiding in the day-time under loose bark?—Geo. T. Porritt, Huddersfield: *July 4th*, 1872.

*Habit of Laverna atra.*—I have reared this from a larva which I found hanging by a silken thread from a hawthorn tree, October 19th, 1871. I put the larva in a glass cylinder with some leaves, and in a day or two it disappeared. There was a quantity of very small grains of cork in the cylinder, as if the cork had been gnawed by the larva. I concluded, therefore, it had gone into the cork, and I reserved the cylinder to wait the result. The moth emerged June 21st. It seems possible from this that it may be the habit of the full-fed larva to burrow into the hawthorn stem. —Hugh Colquhoun, Anchorage, Bothwell, N.B.: *June 24th*, 1872.

*Captures at Witherslack.*—In the middle of May, I made my first journey to look for larvæ, and was tolerably successful. Owing to the weather being very unfavourable for collecting, only in some odd snug corner could I find any moths, and those sparingly—*Anchylopera obtusana* (new to the district), *Catoptria aspidiscana* (2), *Bucculatrix frangulella* and *cristatella*, and *Eupithecia lariciata*, being the best captures. Of larvæ, I got a fair lot of *Rhodophæa marmorella*, *Ephippiphora signatana*, *Teichobia Verhuellella*, *Depressaria Douglasella* (two only, on wild carrot; emerged 7th July. This larva makes quite a large white silken gallery, and totally different to any of the other *Depressaria* that I know of). I also found plenty of *Pterop. lithodactylus* on *Conyza squarrosa*, as well as *Ebulea crocealis* on the same plant, from which I have bred a fine series; on the golden rod *tephradactylus* was feeding (although so late), and I got four larvæ. I found the larva of *R. marmorella* on white-thorn as well as on the sloe, but only on the bushes that had lichen and sheeps'-wool on them: the specimens are fine and large, and so are the specimens of *signatana*, owing no doubt to the very wet season; in fact, when collecting them, the sleet and snow came down fast. Of *Thera coniferata*, I only found a few, and they were very small.

My next journey was in the middle of June, and I came home with two days' work (one of them being 14 hours) well laden, having filled over 300 boxes, including 24 *Eupithecia distinctata*, a fine series of *Coccyx vacciniana*, *Phoxopteryx siculana*, *biarcuana*, *uncana*, *Coleophora Wilkinsonella*, *gryphipennella*, and *virgaureella*, *Elachista subobscurella* and *subochreella*, *Gracilaria hemidactylella* and *Coccyx coniferana*, *Bucculatrix aurimaculella*, *Dicrorampha plumbana*, a nice variety of *Emmelesia candidata*, *Aspilates strigillata* and *Nemoria viridata* still out and fine (two only, and I saw them at rest); and, strange to say, a fine *aspidiscana* out on the open heath: I thought it was a small *Pyrausta* by the flight, going along rapidly with the wind.

My last excursion was on Friday evening last (July 2nd). I went forward to Grange after a hard day's work in Manchester, and took, on my way to Witherslack, seven fine *signatana*, some *Argyresthia mendicella*, one *tephradactylus*, a few *osteodactylus*, &c. I was rather too late in the evening to get a chance at *Argyrolepia luridiana*. The next morning was glorious: before breakfast I took *Diplodoma marginepunctella* and *Glyphipteryx equitella*, and some *Butalis fuscoænella* and *Argyrolepia Baumanniana*. After breakfast, I set out for *Miana expolita* on Whitbarrow, but got among some *Elachista triseriatella*; I spent two or three hours creeping on my hands and knees, and secured a fine series. The setting is one of the most tedious jobs, as they are such delicate little things. Whilst employed in this fashion, I came across *Pt. parvidactylus* (very fine), *Elachista adscitella*, *Butalis fuscocuprella*, and one solitary female *expolita* came and settled beside me (an outsider). I hastened on to the head quarters whilst the sun was up; no sooner had I got on the spot than down came the rain with very little warning; I hurriedly filled my net with thistle leaves to have a job whilst sheltering, and from them I got a score of larvæ of *Depressaria carduella*. A large *Sphinx* came among the *Sedum* on the rocks, but I could not make it out, as it would not let me get near enough; it looked like *lineata*. The rain now made me hurry away, and I got to the Inn (about three miles off) just in time, as the rain set in so heavily, and it blew such a wind, that all collecting was at end, and my best time (the evening) was done for. The next day rain, lightning, thunder, and no amendment to the hour I write. During an hour's lull, I got a bag-full of wild carrot, and found some larvæ of *Depressaria capreolella* feeding.—J. B. HODGKINSON, 15, Spring Bank, Preston: *8th July*, 1872.

*Dicrorampha consortana and Retinia Buoliana at Preston.*—I have been in the habit of going 40 miles away to catch these insects. The former I took on the banks of the Ribble close by here, and the latter when walking in our public park, not half-a-mile away from my house. I got some shoots of *Pinus austriaca* and brought them home, and see five fine moths out to-day. I have bred a fine series of *D. consortana* from the shoots of the ox-eye daisy.—ID.

*Eidophasia Messingiella near Wolverton.*—On the 29th of June, being the only fine night we have had for some time, I went to a small swamp to hunt for *Tineæ*, and, amongst other species, I captured 20 *Eidophasia Messingiella*, several of them, however, were much worn.—W. THOMPSON, 163, Stantonbury, Wolverton, Bucks: *July 1st, 1872.*

*Early appearance of Colias Edusa.*—Considering that most *Lepidoptera* are so backward, it may be worth while noticing in the Magazine that I saw one very fresh *Colias Edusa* yesterday, at Folkestone (a male, I think), on the Railway Bank, and my friend, Mr. J. W. Gore, saw another on West Cliff.—Thos. H. Briggs, Lincoln's Inn : *24th June*, 1872.

*Early appearance of Triphæna subsequa.*—In former years, *T. subsequa* has invariably followed *janthina*, *orbona*, and *fimbria*, never occurring with me before August.

None of the above three species have yet appeared, though, strange to say, I took a female *subsequa* last night at sugar. It was in admirable condition, having evidently just emerged.

I also noticed lately, hovering over *Ononis*, evidently depositing their eggs, many *H. marginata ;* several taken with the net were, however, *passé*. *A. nebulosa*, *N. brunnea*, *E. lucipara*, and *A. ligustri* rare, and this year unusually abundant at sugar, and *N. conflua* is becoming common.—Geo. Norman, Cluny Hill, Forres : *7th July*, 1872.

*Note on the occurrence of rare Lepidoptera in the Isle of Man.*—Referring to the announcement of the occurrence of rare *Lepidoptera* in the Isle of Man, in the last number of this Magazine, page 44, I believe most entomologists will join with me in desiring to know the details of their capture, especially as there are four species mentioned which have not been previously observed in the British islands ; and I hope Mr. Hodgkinson will be kind enough to give your readers the benefit of any information he may possess.

I have no desire to criticise the somewhat novel method which Mr. Gregson has chosen for allowing a knowledge of the existence of these treasures to ooze out, because so great is the suspicion and doubt through which a new species has to make its way to public recognition, that a modest man may well shrink from facing it ; but the mere mention by Mr. Hodgkinson that he saw certain insects in his friend's cabinet is not sufficient to justify their introduction into the list of native species.

I regret to say that the prevalent disbelief of statements as to the occurrence of new or even rare insects is more than justified by the frauds which have been perpetrated through the introduction into England of large numbers of continental *Lepidoptera* in the pupa state, which have been subsequently distributed as British, doing no small damage to science by rendering the real facts of the distribution and peculiarities of British insects almost impossible of attainment.—Edwin Birchall, Airedale Cliff, Newlay, near Leeds : *July 13th*, 1872.

*The relationship between colour and edibility in larvæ.*—The note on this subject by Mr. Doubleday in the last number of the Ent. Mo. Mag., p. 45, does not appear to me to tell against Mr. Wallace's explanation of the bright colours of caterpillars. The law discovered *à priori* by Mr. Wallace, and verified experimentally by Messrs. Jenner Weir and A. G. Butler, only amounts to the fact that brightly-coloured, hairy, and spinous larvæ are refused by a large number of insectivorous birds, and this is all that is required for natural selection. The experiments of Mr. Weir, having been conducted on a certain number of species of birds, do not prove that the law holds good for *all* birds, any more than do the experiments of Mr. Butler prove that the law is true of *all other* insect persecutors. The larvæ of *Zygæna* were rejected by Mr. Weir's birds.—R. Meldola, Brentford: *July 6th*, 1872.

*Mimicry between spiders and flowers.*—Yesterday, my wife noticed a lovely spider in the blossom of a single oleander. It was *white*, beautifully *striped with rose*, and closely resembled the inner part of the oleander flower. I once recorded (Ent. Mo. Mag., vol. ii, p. 14) a similar instance of resemblance between a spider and the flower of the ox-eye daisy in Nova Scotia, in connection with an analogous observation by a gentleman at the Cape of Good Hope.—B. Piffard, Nismes: *26th June*, 1872.

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*South London Entomological Society.*—The Quarterly Meeting of this Society was held on the 19th of June, to elect the Officers and hear the Report read.

Mr. J. R. Wellman was elected President.

The Report stated that the list of Patrons is now complete. It contains the names of Sir John Lubbock, Bart., M.P., H. T. Stainton, Esq., Henry Doubleday, Esq., Edward Newman, Esq., R. M'Lachlan, Esq., and E. C. Rye, Esq.

Thanks were given to the Patrons for their support; also to Messrs. Jarvis, Newman, and Hardwicke for donations of books, to Mr. Norman for a loan to the library, and to several gentlemen who support the Society without deriving any benefit from it.

The objects of the Society have been furthered by the purchase of a few books for the library, and by the exhibition of numerous species of *Coleoptera* and *Lepidoptera*, also of preserved and living larvæ; and, in addition, three papers have been read before the Society.

The following exhibitions have been made: Mr. Wellman—*T. biundularia*, *N. Lucina*, and *Ang. prunaria*, a magnificent and varied series, bred from eggs. Mr. Cowley—*L. exigua*, captured at light in the City, April, 1872. Mr. Rochfort—*C. obliquaria* and *C. chamomillæ*, Wanstead, early in May. Mr. Boden—*Eup. lariciata* (a variety of ?), Leith Hill in May; and others. Mr. Barrett—*B. roboraria*, larvæ and bred imagos from Brockenhurst; a curious bred variety of *N. bella* (?), larva found at Epsom in April; *A. rusticata*, bred from eggs; *R. formosella* and *H. nimbella*, Lewisham, June. Mr. Davis—*D. Orion* and *A. urticæ*, bred; *L. unita* and *P. unguicula*, Box Hill, May. Mr. Marsh—*Monotoma 4-foveolata*, Peckham, and *Emb. verbasci* (recently added Hemipteron), Deal. Mr. Champion—numerous rare and local *Coleoptera*. Mr. Hoey—*Eup. debiliata*, larvæ found at Leith Hill in the spring; and many preserved larvæ. Mr. Chaney—*B. consortaria*, *T. extersaria*, &c., Chatham, May. Mr. Williams—*N. lucina* and others, Tilgate, June; and many others.

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Entomological Society of London: *1st July*, 1872.—Prof. J. O. Westwood, M.A., F.L.S., *President*, in the Chair.

*Lord Moreton* was elected a Member.

Mr. Jenner Weir exhibited two examples of the rare *Agrotera nemoralis*, taken by him in Abbot's Wood, Sussex, on the 26th ult.

Mr. Meldola exhibited dwarf forms of *Anthocaris cardamines*, *Porthesia auriflua*, *Abraxas grossulariata*, &c.; a variety of *Venilia maculata* in which the black spots were entirely absent: and a specimen of *Leucania vitellina* taken at Brighton in 1869.

Prof. Westwood exhibited prettily banded cocoons of some species of *Ichneumonidæ* from Ceylon, each of which was attached to a silken peduncle more than two inches in length. Also a tent-like covering formed by the larva of a lepidopterous insect in Ceylon by cutting out a large oval piece from a leaf of *Citrus*, beneath which it fed.

Mr. Müller exhibited pieces of the fronds of *Pteris aquilina* from Weybridge, illustrating the habits of the larvæ of three species of *Diptera*. (1) folded edges of the fronds produced by *Cecidomyia pteridis* (see Ent. Mo. Mag., vol. viii, p. 99); (2) mines of some species of *Muscidæ* in the tips of the leaflets; (3) rolls at the apex of the fronds also produced by a species of *Muscidæ*.

Mr. Dunning called attention to an article in 'Nature' for June 20th, 1872, by Mr. H. N. Moseley, respecting the sound produced by *Acherontia Atropos*. After passing in review the opinions published by various writers since the time of Réaumur, and stating that eleven different theories on the subject had been propounded, Mr. Moseley detailed his own experiments which convinced him of the correctness of Passerini's statement in 1828 as to the sound proceeding from the proboscis, and caused by the sudden expiration of air from a cavity within the head acted upon by elevating and depressing muscles, after the manner of bellows. Mr. Moseley concluded by observing that "It is most extraordinary that the seat of sound should "ever have been imagined to be any where but in the head. It would seem as if "many writers on the subject had commenced their observations with a determination to find some other seat for the cry."

Mr. Dunning further alluded to a letter by Dr. Leconte in the same journal for June 27th, respecting the parasite of the beaver upon which Prof. Westwood had founded his order *Achreioptera* (see Ent. Mo. Mag., vol. vi, p. 118), but which Herr Ritsema considered as pertaining to the sub-order *Aphaniptera*. Dr. Leconte dissented from both views, and transferred the insect to the *Coleoptera* as an aberrant family. Furthermore, he thought it probable that it was not a true parasite, but rather an inquiline, perhaps feeding upon epidermal scales. Prof. Westwood stated that he maintained his original opinion, and believed the creature had nothing to do with the *Coleoptera*.

Mr. W. A. Lewis placed before the meeting a copy of a circular (with signatures appended thereto) addressed to entomologists, urging them to ignore the reinstatement of forgotten or obsolete names until such time as the mode of dealing with these should be settled by a common agreement.

Prof. Westwood stated that he had recently published an article in which he suggested that a limitation of 20 years, such as regulates adverse claims to real property in England, might with advantage be adopted in disputed cases in zoological nomenclature.

The next Meeting, after the recess, will be on the 4th of November.

# LIST OF BRITISH *DOLICHOPODIDÆ.*

### BY G. H. VERRALL.

The *Dolichopodidæ* in the first volume of Walker's "Insecta Britannica" are perhaps more carefully described than is any other family in that work, owing principally to the attention which had been paid to them by the late Mr. Haliday; and, when revised by the elaborate criticism of Loew, in his "Neue Beitrage," v, they become very easy to name. The principal alterations in this list are the adoption of Loew's genera and arrangement, as proposed in the Monographs of North American *Diptera*, and the addition of a few new species. In Walker's work, 137 species and 15 genera were described; I now enumerate 154 species and 34 genera. Those species marked with an asterisk I require more information about, some of them having been originally described from British specimens, but not having been well distinguished.

HYGROCELEUTHUS, *Lw.*
diadema, *Hal.*
latipennis, *Fall.*

DOLICHOPUS, *Ltr.*
atripes, *Mg.*
phæopus, *Wlk.* (1851).
*montanus*, *Lw.* (1871).
vitripennis, *Mg.*
atratus, *Mg.*
picipes, *Mg.* (1824).
*fastuosus*, *Hal.* (1831).
lepidus, *Stæg.*
*picipes*, *Wlk.* (1851).
campestris, *Mg.*
*fulgidus*, *Zett.*
Fallenii, *Lw.*
*nigripes*, *Fall. pt.*
melanopus, *Mg.*
planitarsis, *Fall.*
clavipes, *Hal.*
*fuscipes*, *Hal.* ♀.
rupestris, *Hal.*
nubilus, *Mg.* (1824).
*inquinatus*, *Hal.* (1831).
*var. Actæus*, *Hal.* (1831).
claviger, *Stann.*
confusus, *Zett.*
discifer, *Stann.*
plumipes, *Scop.*
*pennitarsis*, *Fall.*
Wahlbergii, *Zett.*
pennatus, *Mg.*
*signatus*, *Zett.*, *Lw.*, *Schin.*
popularis, *W.*
signatus, *Mg.* (1824).
*argentifer*, *Lw.* (1859).
urbanus, *Mg.*
acuticornis, *W.*
longicornis, *Stann.*
lineatocornis, *Zett.*
linearis, *Mg.*
nitidus, *Fall.* (1823).
*jucundus*, *Hal.* (1833).
griseipennis, *Stann.* (1831).
*nitidus*, *Hal.* (1831).
signifer, *Hal.*
*punctum*, *Wlk.* [*nec Mg.*].
*pictipennis*, *Whlbg.* (1850).
sabinus, *Hal.*
simplex, *Mg.* (1824).
*thalassinus*, *Hal.* (1831).

virgultorum, *Wlk.*
arbustorum, *Stann.*
festivus, *Hal.*
trivialis, *Hal.*
? agilis, *Mg.*
brevipennis, *Mg.*
equestris, *Hal.*
æneus, *Deg.*
*ungulatus*, *Auct.*

### GYMNOPTERNUS, *Lw.*

nobilitatus, *L.*
*joco*, *Harris.*
*ludicrus*, *Harris.*
principalis, *Lw.* (1861).
*civilis*, *Kow.* (1868).
nigricornis, *Mg.* (1824).
*gracilis*, *Stann.* (1831).
chærophylli, *Mg.*
germanus, *W.*
nigriplantis, *Stann.*
nigripennis, *Fall.*
atrovirens, *Lw.*
cupreus, *Fall.*
angustifrons, *Stæg.*
celer, *Mg.* (1824).
*sarus*, *Hal.* (1831).
metallicus, *Stann.*
ærosus, *Fall.*
*var. Dahlbomi*, *Zett.*
assimilis, *Stæg.*
nanus, *Mcq.*
parvilamellatus, *Mcq.*
*præetextatus, *Hal.*

### TACHYTRECHUS, *Stann.*

notatus, *Stann.* (1831).
*plumipes*, *Hal.* (1831).
*litoreus*, *Hal.* (1833).
consobrinus, *Wlk.* (1851).
*plumipes*, *Mg.* (1824) [*nec Fall.*].
insignis, *Stann.*

### ORTHOCHILE, *Ltr.*

nigrocærulea, *Ltr.*
*Walkeri*, *Rond.* ?.

### HERCOSTOMUS, *Lw.*

*fulvicaudis*, *Wlk.*

### HYPOPHYLLUS, *Lw.*

discipes, *Ahr.*
obscurellus, *Mg.*
cretifer, *Wlk.* (1849).
*alutifer*, *Wlk.* (1851).

### ANEPSIUS, *Lw.*

flaviventris, *Mg.*

### ARGYRA, *Mcq.*

diaphana, *F.* (1787).
*versicolor*, *Mg.* (1824).
*hirtipes*, *Curt.* (1835).
confinis, *Zett.*
argentina, *Mg.*
*semiargentella*, *Don.*
argentata, *Mcq.*
leucocephala, *Mg.* (1824).
*fulgens*, *Hal.* (1831).
elongata, *Zett.*

### SYNTORMON, *Lw.*

Zelleri, *Lw.*
denticulatum, *Zett.*
pumilum, *Mg.*
tarsatum, *Fall.*

### SYNARTHRUS, *Lw.*
### *PLECTROPUS*, *Hal.*

pallipes, *F.* (1794).
*? decoratus*, *Hal.* (1831).
monilis, *Wlk.*

### RHAPHIUM, *Mg.*

longicorne, *Fall.*

### XIPHANDRIUM, *Lw.*

fissum, *Lw.*
caliginosum, *Mg.* (1824).
*macrocerum*, *Mg.* (1824).
monotrichum, *Lw.* (1850).
*macrocerum*, *Zett.* (1849).
*caliginosum*, *Hal.* (1831).
appendiculatum, *Zett.* (1849).
*cupreum*, *Wlk.* (1851) [*? Mcq.*].
*macrocerum*, *Curt.* (1835).
brevicorne, *Curt.* (1835).
*dissectum*, *Lw.* (1850).
fasciatum, *Mg.*

PORPHYROPS, *Mg.*
*PERITHINUS, Hal.*
antennatus, *Carl.*
spinicoxus, *Lw.* (1850).
*communis, Wlk.* (1851) [*? Mg.*].
fascipes, *Mg.* (1824).
*insulsus, Hal.* (1831).
nemorum, *Mg.*
pectinatus, *Lw.*
consobrinus, *Zett.* (1843).
*fulvipes, Wlk.* (1851) [*? Mg.*].
*rufipes, Hal.* (1833) [*? Mg.*].
*riparius, Hal.* (1831) [*nec Mg.*].
elegantulus, *Mg.* (1824).
*Wilsoni, Curt.* (1835).
crassipes, *Mg.*
gravipes, *Wlk.*

MACHÆRIUM, *Hal.*
*SMILIOTUS, Lw.*
maritimæ, *Hal.*

APHROSYLUS, *Wlk.*
raptor, *Wlk.*
celtiber, *Hal.*
ferox, *Wlk.*

THINOPHILUS, *Whlbg.*
flavipalpis, *Zett.*
ruficornis, *Hal.*
versutus, *Wlk.*

LEUCOSTOLA, *Lw.*
vestita, *W.*

EUTARSUS, *Lw.*
aulicus, *Mg.*

DIAPHORUS, *Mg.*
nigricans, *Mg.* (1824).
*obscurellus, Zett.* (1843).
oculatus, *Fall.* (1823).
*flavocinctus, Mg.* (1824).
Winthemi, *Mg.*

CHRYSOTUS, *Mg.*
*cupreus, Mcq.*
læsus, *W.*
neglectus, *W.* (1817).
*femoralis, Mg.* (1824).
*viridulus, Fall.* (1823).
gramineus, *Fall.* (1823).
*copiosus, Mg.* (1824).

TEUCHOPHORUS, *Lw.*
spinigerellus, *Zett.* (1843).
*flavicoxa, Mg.?* (1824).
calcaratus, *Mcq.*

SYMPYCNUS, *Lw.*
cirrhipes, *Wlk.*
annulipes, *Mg.* (1824).
*pulicarius, Wlk.* (1851) [*? Fall.*].

CAMPSICNEMUS, *Wlk.*
*CAMPTOSCELES, Hal.*
scambus, *Fall.* (1823).
*prodromus, Mg.* (1824).
curvipes, *Fall.*
loripes, *Fall.*
armatus, *Zett.*
*prodromus, Hal.* (1831) [*nec Mg.*].
pusillus, *Mg.*
alpinus, *Hal.*

LIANCALUS, *Lw.*
virens, *Scop.* (1763).
*regius, F.* (1805).
*formosus, Hal.* (1831)
lacustris, *Scop.*

SCELLUS, *Lw.*
notatus, *F.*

HYDROPHORUS, *Whlbg.*
nebulosus, *Fall.* (1823).
*conspersus, Hal.* (1831).
bipunctatus, *Lehm.*
borealis, *Lw.* (1857).
*binotatus, Zett.* (1849).
balticus, Mg.
litoreus, Fall.

viridis, *Mg.* (1824).
*præcox*, *Wlk.* (1851) [*nec Lehm.*].
bisetus, *Lw.* (1857).
*inæqualipes*, *Wlk.* (1851) [*nec Mcq.*].

ACHALCUS, *Lw.*
cinereus, *Wlk.* (1851).
*pygmæus*, *Zett.* (1855).
flavicollis, *Mg.*

MEDETERUS, *Fisch.*
Jaculus, *Fall.*
truncorum, *Mg.*
diadema, *L.*
tristis, *Zett.*
*muralis, *Mg.*

THRYPTICUS, *Gerst.*
bellus, *Lw.*

CHRYSOTIMUS, *Lw.*
molliculus, *Fall.*
concinnus, *Zett.*

XANTHOCHLORUS, *Lw.*
*LEPTOPUS*, *Hal.*
ornatus, *Hal.*
tenellus, *W.*
*bicolorellus, *Zett.*

NEURIGONA, *Rond.*
*SAUCROPUS*, *Lw.*
pallida, *Fall.*
suturalis, *Fall.*
quadrifasciata, *F.*
*Erichsonii, *Zett.*

PSILOPUS, *Mg.*
*PSILOPODIUS*, *Rond.*
platypterus, *F.*
Wiedemanni, *Fall.*
longulus, *Fall.* (1823).
*lugens*, *Mg.* (1824).
*obscurus, *Mg.*
lætus, *Mg.*
contristans, *W.*

The Mulberries, Denmark Hill, S.E.: *July*, 1872.

## DESCRIPTIONS OF A NEW GENUS AND FIVE NEW SPECIES OF EXOTIC *PSOCIDÆ.*

BY R. M'LACHLAN, F.L.S.

This paper may be looked upon as a continuation of one by me published in the Trans. Ent. Soc. Lond., ser. 3, vol. v, pp. 345—352 (1866). Having recently had a number of species from Ceylon (sent by Mr. Thwaites to Prof. Westwood) placed in my hands for determination, I decided upon describing some new forms among them, and including, with these, others from my own collection. All the species are from the Asiatic continent or islands. An outline figure of the neuration of the new genus is added; and it is very desirable that the whole of the described genera should be treated in this way, for I know by experience how difficult it is for a student commencing an investigation of the *Psocidæ* to follow descriptions of the neural characters without the aid of figures.

One word of advice to collectors,—*do not card Psocidæ;* such a practice entails double labour upon him who has to determine them, as the neuration can only be traced with difficulty in carded specimens.

### Psocus 5-punctatus, n. sp.

*P. rufescens? (Corporis colores incertæ). Alæ hyalinæ: anticæ fasciâ interruptâ obliquâ paullo ante medium, nebulâ in pterostigmate et in cellulâ discoidali, punctisque quinque in cellulis apicalibus, griseis; pterostigmate elongato-triangulare; venis fuscis, discalibus nonnullis pallidis: posticæ hyalinæ, immaculatæ, venis fuscescentibus.*

*Exp. alar.* 5 *lin.* (=10 *mill.*).

Hab.: Ceylon (*Thwaites*). In Mus. Oxon.

The specimen is flattened and mounted in balsam, hence the colours of the body, &c., are uncertain. The species is decidedly allied to the European *P.* 6-*punctatus*, Linn.; it may also, probably, have some affinity with the Ceylonese *P. circularis*, Hag., which, however, is much smaller.

### Psocus clarus, n. sp.

*P. albidus. Antennæ nigræ, nigro-pilosæ; articulis duobus basalibus albidis. Oculi nigri, late nigro-cincti. Palpi pedesque albidi, hi articulo ultimo tarsorum fuscescenti. Thorax maculis quinque nigris, nitidis, ornatus. Abdomen vix fuscescens. Alæ hyalinæ, immaculatæ, elongatæ: anticæ pterostigmate valde elongato, lineari, vix flavido-tincto; venis marginibusque nigris.*

*Exp. alar.* 5¾ *lin.* (=11¼ *mill.*).

Hab.: Ceylon (*Thwaites*). In Mus. Oxon.

Evidently allied to *P. elongatus*, Hag., from the same island. Differs in its paler colour, in its uniformly pale mouth and palpi, the wholly pale legs (excepting the apical joint of the tarsi), the five black spots (one on each lobe) of the thorax, &c. Owing to the elongate anterior wings, the discoidal cell appears to be placed very near the base. The margins and most of the veins appear to be somewhat thickened, and hence conspicuously black.

### Psocus malayanus, n. sp.

*P. pallide flavo-griseus. Antennæ alis longiores, nigræ, nigropilosæ; articulis duobus basalibus omnino,* 3° (*ad apicem excepto*), 4°—6° *ad basin, flavidis. Palpi articulo ultimo fuscescenti. Caput infra oculos macula triangulari fusca signatum. Thorax maculis* *quinque nigris ornatus. Pedes pallide flavidi, tarsis ad apicem fuscescentibus; femoribus posticis extus obsolete fusco-lineatis. Alæ hyalinæ, immaculatæ, elongatæ: anticæ pterostigmate valde elongato, lineare, pallide fumato; venis marginibusque fuscis.*

*Exp. alar.* 5½ *lin.* (=11 *mill.*).

Hab.: Sula (*Wallace*). In Mus. auct.

Also allied to *P. elongatus*, but differing from it, as does *P. clarus*, by the paler colour of the body, and the distribution of the dark markings of the legs, head, &c. Apparently more closely allied to *elongatus* than to *clarus*. I possess four examples.

NOTE 1:—*Psocus cosmopterus*, McLach., Trans. Ent. Soc. 3 ser., vol. v, p. 350, can only be regarded as identical with *P. taprobanes*, Hag., of which it is a slight local modification. I have it also from Bengal, and it is probably distributed throughout the East.

NOTE 2:—*Psocus longicornis*, Fab. Four examples (1 ♂, 3 ♀) taken by Capt. Lang at Masuri, North India (7000 feet), in June, do not appear to differ in any way from European specimens, thus indicating a very wide range, which it is probable is the rule with the majority of the species of *Psocidæ*.

### CÆCILIUS PICTIPENNIS, n. sp.

*C. niger. Antennæ pallide flavidæ, graciles. Caput rufescens; labro nigricante. Thorax niger, suturis albidis. Abdomen nigricans. Pedes albidi; tarsorum articulo ultimo fuscescenti. Alæ anticæ ad apicem ellipticæ; dimidio fere basali nigro, nitido, albo-guttato, dimidio apicali hyalino; fasciâ sub-pterostigmaticali, limboque apicali fasciæ ad marginem inferiorem conjuncto, testaceis; pterostigmate elongato, sublineare, intus nigro-notato; cellulâ liberâ marginali semi-circulari; venis in dimidio basali nigris, apicali pallidis: posticæ dimidio basali fumato, apicali hyalino.*

*Exp. alar.* 3¼ *lin.* (=6½ *mill.*).

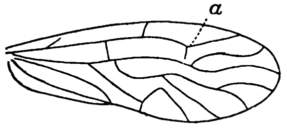
Hab.: Ceylon (*Thwaites*). In Mus. Oxon.

Quite distinct from any species yet described.

### AMPHIPSOCUS, n. g.

*Characteres fere ut in Cæcilio; sed pterostigma venam abbreviatam, haud venæ furcatæ conjunctam, emittit.*

The foregoing brief diagnosis indicates that the species upon which I have founded this new genus is in some respects intermediate between *Cæcilius* and *Stenopsocus.* With the former of these it agrees in its open discoidal cell, and the arrangement of the posterior marginal cellules, but differs in the abbreviated transverse vein from the lower angle of the pterostigma (indicated by *a* in the figure) ending abruptly in the membrane about half-way towards the forked vein beneath it, thus indicating some affinity with *Stenopsocus,* in which this sub-pterostigmatical vein is continuous; but the latter genus has a closed discoidal cell. The tarsi are 2-jointed.



*Psocus palliatus,* Hagen, which is at present unknown to me, has a similar abbreviated sub-pterostigmatical vein, but a closed discoidal cell. It probably forms the type of another genus.

### AMPHIPSOCUS PILOSUS, n. sp.

*A. griseo-albidus. Antennæ pallide flavidæ, valde pilosæ. Caput plerumque rosaceo-suffusum, maculâ intense rosaceâ pone oculos signatum. Oculi ♂ modices, ♀ parvi. Palpi pallidi, articulo ultimo nigro-terminato. Mesothorax hirsutus, maculis nigris magnis tribus ornatus. Metathorax utrinque fusco-signatus. Abdomen griseo-flavidum, rosaceo vel purpureo-maculatum (colores mutati). Pedes pallidi, valde pilosi; tibiis nigro-punctatis. Alæ hyalinæ : anticæ elongato-ovales, ad apicem dilatatæ ac fere semicirculares ; venis longe pilosis, plerumque flavidis, nonnullis nigris, apicem versus paullo flexuosis ; cellulâ liberâ marginali triangulari; pterostigmate elongato-triangulare, rosaceo-suffuso, puncto nigro interiori signato.*

*Exp. alar.* 4½ *lin.* (=9 *mill.*).

Hab.:—Northern India. In Mus. auct.

I have five examples of this pretty species, three of which were taken by Capt. A. M. Lang at Masuri, in the month of June.

NOTE 3:—A type specimen of *Psocus chloroticus,* Hag., shown to me by Baron de Selys Longchamps, has a decidedly different neuration to that of *Psocus* (as restricted), there being a closed discoidal cell, but only three marginal cellules instead of four: it will form a new genus.

NOTE 4:—The type of the insect described by Rambur as *Psocus pedicularius* is very curious, and has nothing whatever to do with the Linnean species of that name (*binotatus,* Rambur).

It is probably exotic, having been introduced with plants, or by some other means. The tarsi are 3-jointed; two complete marginal sub-apical cellules, an elongate free cellule, and behind this (nearer the base) a supernumerary cellule. Certainly forms the type of another new genus.

NOTE 5:—*Psocus roseus*, Hagen, is placed by him, in his 'Psocinorum synopsis synonymica,' in the restricted genus *Psocus*. This is an error, according to a drawing sent by him to me in 1866. It should be placed in *Epipsocus*.

Lewisham: *July*, 1872.

## MIMICRY IN THE COLORS OF INSECTS.*

BY DR. H. A. HAGEN.

Having observed that in treating of the interesting phenomena of mimicry, writers have used indiscriminately very different factors, I shall try to give some preliminary ideas which I do not find published, and which I believe will be useful in explaining this interesting subject.

It will be best to consider the color and pattern separately. There are three different kinds of colors: viz., colors produced by interference of light, colors of the epidermis, and colors of the hypodermis. All three may either be wanting, or all three, or two of them may occur together in the same place.

Colors produced by interference are produced in two different ways; first by thin superposed lamellæ, as in the wings of *Diptera*, *Neuroptera*, &c., without any other color, as in hyaline wings, or connected with other colors as in the scales of *Entimus* and others.

There must be at least two superposed lamellæ to bring out colors by interference, and there cannot be more than four, as both wings and scales consist only of four layers, two internal belonging to the hypodermis, two external belonging to the epidermis. In fact, if scales taken from dry specimens of *Entimus* are observed under the microscope, many partly injured can be found, which give different colors according to the layers of the lamellæ which remain.

Secondly, colors by interference are produced by many very fine lines or striæ in very near juxtaposition, as in *Apatura* and other color-changing insects. Colors by interference may perhaps be sometimes also produced in the same way as in the feathers of the dove's neck, by very small impressions situated near together.

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* This article is reprinted from the 'American Naturalist' for July, 1872, pp. 388–393. The MS. copy was kindly sent to me by the author for publication in this Magazine; but the reprint is here given, because the Amer. Nat. probably had the benefit of the author's personal corrections for press.—R. McLACHLAN.

The colors produced by the interference of light are only optical phenomena, differing in this respect from the other colors of the body, the epidermal and hypodermal colors.

The epidermal colors belong to the pigment deposited in the cells of the chitinized external skin, the epidermis. These colors are mostly metallic blue, green, bronze, golden, silver, black, brown, and perhaps more rarely red. The epidermal colors are very easily recognized, because they are persistent, never becoming obliterated or changed after death.

The hypodermal colors are situated in the non-chitinized and soft layer, called hypodermis by Weismann. They are mostly brighter and lighter, light blue or green, yellow, milk white, orange, and all the shades between. The hypodermal colors *in the body* of the insect fade or change, or are obliterated after the death of the insect. A fresh or living insect when opened may easily be deprived of the hypodermal colors simply by the action of a little brush. I said hypodermal colors in the body, because there are hypodermal colors which are better protected, being encased nearly air-tight, and therefore are more easily preserved even after the death of the insect. I refer to the colors in the elytra and wings, and in their appendages, the scales. The elytra and the wings are, as is well known, at first open sacs in communication with the body, of which they are only the extension: of course they are formed of the epidermis and hypodermis which become so strongly glued together after the transformation into the imago state that a maceration of years tried by me showed no effect at all on such wings. This fact is very interesting, as it explains how wings, and even colored wings, can be found in palæontological layers in good preservation. The destruction of insects, which is so peculiar to the secondary strata in England, proves, as I believe, that the bodies of the insects must have floated a very long time before they were deposited. It is quite a rarity to find well preserved insects there, although many very well preserved wings even of lace-winged flies have been described.

There is an interval after the transformation before the membranes of the wings become inseparably glued together; it is at this time that the finishing of the colors takes place. For instance in an *Æschna*, a *Libellula depressa* or *trimaculata*, if the wing is cut off at the base, the two layers can be easily separated by manipulation under water, and the wing can be inflated with a little tube by separating the borders with a knife. I can show specimens so prepared.

But this is only possible as long as the wings possess the appearance of having been dipped into mucilage, an appearance which is well known in young *Odonata*.

The scales have just the same development as the wings. At first they are little open sacs, communicating with the hollow of the wing and the whole body, and at a later period are glued together like the wings themselves.

In the wings and in the scales the hypodermal colors are formed and finished before the wings stick together, and by this means they are well preserved and safely encased. They have no more communication in the glued parts with the interior of the animal, and are preserved in the same way, as if hermetically inclosed in a glass tube. There are even here in the wings and scales many epidermal colors, chiefly the metallic ones; but all the brighter colors (for instance the somewhat transparent spots in the elytra of the *Lampyridæ*, *Cicindelidæ*, &c., and in the greater number of *Lepidoptera*) are, as I believe, hypodermal colors.

Finally, there sometimes occurs outside of the animal, that is, on the epidermis, a kind of color which I consider as hypodermal color, such as the pale blue on the abdomen of many *Odonata*, the white on the outside of many *Hemiptera*, the pale gray on the elytra and thorax of the *Goliathus* beetle, the powder on *Lixus* and others. Some of these colors are very easily resolved in ether, and are apparently a kind of wax. I believe that these colors are produced by the hypodermis and are exuded through the little channels of the pores (*Poren Canæle*).

The hypodermal colors are very often different in males and females of the same species, the epidermal colors rarely differ so far as I know; but there are genera with prominent epidermal colors which are nearly always different in different sexes, viz., *Calopteryx*, *Lestes*, some *Hymenoptera*, &c.

It would be interesting to know the different colors of the epidermis in such cases. So far as I know the change seems to be between related and not between complementary colors. But my observations are far from having any conclusive importance. The same investigation would be necessary for the hypodermal colors.

The hypodermal colors may change or be altered in some way in a male or female during its lifetime, by sexual or other influences. The epidermal colors never change. By sexual influences yellow is changed into orange, brown into red, and even sometimes more changed. By other influences, for instance by cold in hibernation, pale yellow is changed into red (*Chrysopa*). The hypodermal colors can be changed even by a voluntary act of the animal, and the new colors disappear again (*Cassida*). The hypodermal colours are the only ones on which the animal has any influence either involuntarily by the action of the nutritive fluid or voluntarily. The epidermal cells are placed entirely outside of any influences of the animal, when once established. It will perhaps be possible to prove that the so-called mimetic colors are all hypodermal colors.

The hypodermal colors seem to be produced by a photographic process (I know no better expression), the epidermal colors by a chemical process of combustion or oxidation. Would it be possible to prove that by a photographic process even the colors of the surrounding world could be transmitted, a great step towards an undertaking of the phenomena would be given. The fact of course is very probable, at least in some instances.

In observing the mimicry, the pattern of an insect must be clearly separated from the color. In fact the pattern is not the product of an accidental circumstance, but apparently the product of a certain law, or rather the consequence of certain actions or events in the interior of the animal and in its development. The proof is very easily afforded by the regularity of the pattern in a genus, or a family of insects. If studied carefully and comparatively the pattern in a genus is the same or is only more or less elaborated. The number of such families is so exceedingly great that some example will readily occur to every one.

Moreover, a certain and constant pattern can be found for the head, a different pattern for the segments of the thorax, and a different pattern for the segments of the abdomen. This pattern is in the different segments of the abdomen (*Hymenoptera*, *Diptera*, *Neuroptera*, *Orthoptera*) always the same, only more or less elaborated, and less finished in the first and last. segments. In some way, the same is true for the thoracic segments.

In some few instances, I was able to observe how the pattern is produced. In the *Odonata* (Dragon flies), at the moment of transformation, the thorax is transparent, and shows no colors at all. At this time, the muscles are without importance, and in process of formation. The thoracic muscles, as is well known, are, in the *Odonata*, very powerful, and also very extraordinary as regards the shape of their tendons. Just along outside the muscles are dark lines more or less well finished, and resulting from the action of the muscles. *Ubi irritatio, ibi afluxus.* I believe that it would not be unphilosophical to conclude that a powerful action in the development of the muscles is in such a case the cause of a greater combustion or oxidation in the neighboring parts. In fact, on the head of a *Cicada*, on the abdomen of an *Æschna*, we find similar patterns, in some way mostly representing the underlying muscles. In the *Gomphina*, the fact is striking, and far more, as the stronger species mostly possess a large dark pattern. There are some very small species which are almost entirely yellow; there are no small species entirely black.

Should the fact, with the explanation, be admitted, a step farther in the explanation of the different patterns would be made. I know very well that in the *Odonata* there are patterns which do not agree with my explanations, even some contrary to it, but if some certain facts be explained, there are perhaps more factors still unknown or unobserved. The explanation given for certain facts would still be admissible, or at least not entirely objectionable.*

The patterns on the wings and elytra could not be the product of the action of muscles, but I believe it to be probable that the sudden rush of blood or even air, by the accelerated circulation and respiration in the act of transformation may have the same effect. In this way some patterns, otherwise not explicable, could be understood. The eye-spots in the caterpillars of some *Papilionidæ* have been ascertained by Leydig to be epidermal colors, and I believe that the various kinds of eye-spots in the wings of the imago are also epidermal colors. If a stream of blood meet a small obstacle just in the centre, a funnel is formed; if this obstacle be a ring, and behind it another obstacle, we have two or more funnels, one in the other, and the section of them will be circular or elliptical according to the angle at which they reach the surfaces. Such patterns in the elytra and wings are formed or preformed at the time when the wing is a sac; sometimes before the transformation, and here is another circumstance which explains some patterns. The walls of the sac are suddenly augmented and strongly dilated in the transformation. Small patterns preformed in the sac will also be altered and enlarged by the same process, and I know that many patterns of Lepidopterous wings are in such a way very easily explained. All the waved lines of the wings and other marks belong here, and as the ribs or nervures seem to grow faster in transformation, the waved appearance would be explained. In fact the greater part of the patterns seem to be produced by expansions or distraction of the pattern preformed in the wing at some period before the transformation.

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* So far as I know the literature relating to the phenomena of mimicry, all these related differences are often confused, and I believe that in separating them, and following the views above given, many facts would be better understood, and this interesting subject more easily advanced.

Besides all the difficulties which oppose a clear and correct view, there is one more which I do not find mentioned, *i. e.* the so-called color-blindness and the different degrees of it. Prof. B. A. Gould, in his excellent work 'Investigations on Anthropological Statistics of American Soldiers,' has given attention to it in a very remarkable chapter. "Persons who cannot distinguish ripe cherries upon the tree, or strawberries on the vine, by their color are far more numerous than would be suspected. Serious misunderstandings and even calamities have been reported in the army, resulting from mistakes in the color of green and red light by officers of the signal corps." He gives the statement that usually one in twenty, and in the soldiers examined one in fifty, was subjected to color-blindness. But these numbers show only the extremes, and it is easy to believe that a much greater number are more or less affected with it. In fact, we have no means of measuring this physiological difference: if two persons call something green, and even compare the color with certain known objects, there is no proof at all that they see just the same *color.* I think that it would be prudent, in describing cases of mimicry, especially when they are *extraordinary, not to forget* that even the best observer may be unaware of this infirmity, and in *fact the best authorities on* color-blindness always state that the greater number of persons have *no idea of their infirmity.*—H. A. H.

Cambridge, Massachusetts.

## DESCRIPTIONS OF SEVEN NEW EXOTIC *RHOPALOCERA.*

BY W. C. HEWITSON, F.L.S.

### (*Heliconidæ*).

### CLYRAS TRANSLUCENS.

*Upper-side.* ♂: transparent white, tinted with yellow near the base; the nervures black, the margins dark brown, broad on the outer margin of the posterior wing. Anterior wing with a minute white spot on the costal margin at the end of the cell; the second median nervule thickened as it approaches the outer margin.

*Under-side* as above, except that there are some minute indistinct white spots on the outer margin near the apex and anal angle of the anterior wing, and a sub-marginal series of distinct white spots in pairs on the posterior wing. Antennæ orange, with the base black.

Exp. 3½ inch. Hab. Ecuador (Buckley).

This and the five following spp. are in my own collection.

### HELICONIA CHOARINA.

*Upper-side* black. Anterior wing tinted with blue, with an irrorated ray of white from the base; crossed beyond the middle by a curved irregular band of eight white spots, and by a sub-marginal band of white spots. Posterior wing crossed beyond the middle by a broad band of eight yellow and white spots, and by a sub-marginal band of eight small white spots in pairs between the middle of the wing and the anal angle.

*Under-side* as above, except that it is rufous-brown, that the ray from the base of the wings is broader, and has below it a spot which *is attached to the last* spot of the central band, and that there is a marginal series of white spots in pairs; also that the posterior wing has the base of the costal margin white, and is crossed before the middle by a transverse band of the same colour.

Exp. $3\frac{3}{10}$ inch. Hab. Ecuador (Buckley).

This adds a third species to that small and very rare group represented by *H. Hecuba* and *Cassandra* which so much resemble *Tithorea, Humboldtii* and *Bonplandi.* It is most nearly allied to *Cassandra.*

### (*Nymphalidæ*).

### DIADEMA RUHAMA.

*Upper-side.* ♂: dark brown. Anterior wing rufous at the base, marked by eight black spots, six of which are within the cell; crossed from the costal margin beyond its middle to near the anal angle by an irregular, narrow, oblique band of rufous-orange, broken into spots below the median nervule. Posterior wing rufous, marked near the base by nine or ten black spots: the nervures and lines between them black: the outer margin dark brown.

*Under-side* as above.

Exp. $3\frac{1}{10}$ inch. Hab. Angola.

Allied to *D. Eurytus* and *Dolomena*: the anterior wings, however, are much narrower, with the outer margin sinuated;—in fact, more like an *Acræa*, and nearly resembling fig. 28 of *A. Euryta* in my 'Exotic Butterflies.'

### (*Satyridæ*).

### DEBIS DELIADES.

*Upper-side* white. Anterior wing with the costal margin from the base to the middle, the whole of the cell and a little beyond it, a triangular spot between the first and second median nervures near their base, the apex (where it is broad, and marked on the costal margin by a small trifid white spot and two small black ocelli, each dotted with white) and the outer margin (where it is deeply sinuated on the inner border) and a round spot near the anal angle, all dark rufous-brown: a sub-marginal line of dark brown. Posterior wing crossed beyond the middle by a series of seven blind ocelli: the first, second, third and fourth large, the others small: a sub-marginal series of lunular brown spots: the outer margin rufous-yellow, bordered on both sides with black.

*Under-side* as above, except that the anterior wing is nearly white, the spots on the upper-side being scarcely visible; that the posterior wing has perfect black ocelli, each with a white centre and rufous iris, and that the sub-marginal lunular spots are also rufous.

Exp. $2\frac{3}{10}$ inch. Hab. Darjeling (Roberts).

This is a remarkable species, and cannot be compared in colour with any other butterfly.

### DEBIS DOLOPES.

*Upper-side.* ♀: rufous-brown. Anterior wing crossed from the costal margin beyond its middle to a little above the anal angle by a band of paler colour, straight until it reaches the sub-median nervule, where it makes an angle inwards. Posterior wing tailed: crossed by a sub-marginal band of five blind black ocelli bordered with dull yellow, the middle ocellus much smaller than the rest.

*Under-side.* Both wings rufous-brown to beyond the middle, crossed by a continuous common band of dark brown bordered outwardly by lilac-white, the margin of the brown sharp and well defined: the wing beyond it rufous-white. Anterior wing with four scarcely visible ocelli: posterior wing with seven ocelli, which are small and black, each with a white centre and yellow iris bordered with brown, the first and fifth largest.

Exp. $2\frac{1}{2}$ inch. Hab. Darjeling (Roberts).

### LASIOMMATA LYRNESSA.

*Upper-side.* ♂: dark rufous-brown; the ocelli of the under-side very indistinctly visible.

*Under-side* dark rufous-brown, crossed beyond the middle by a transverse band from the costal margin to near the anal angle, at first narrow and white, afterwards broad and rufous; a sub-apical ocellus with white centre and rufous iris: a sub-marginal black line. Posterior wing crossed from the apex to the anal angle by an indistinct straight band of white with three ocelli above it, two (scarcely visible) near the costal margin, one (larger) near the anal angle, all centred with white and with rufous irides, the larger ocellus bordered with dark brown and again with paler colour, and above it an arched band of brown.

Exp. 2 inches. Hab. New Caledonia.

## *(Lycænidæ).*

### IOLAUS INORES.

*Upper-side.* ♂: body and wings of a brilliant cerulean blue. Anterior wing with the space from the end of the cell to the apex and costal margin and bounded below by the second median nervule, black. Posterior wing with two tails.

*Under-side* brown. Anterior wing cerulean blue from the second median nervule to the inner margin, which has a fringe of long black hairs. Posterior wing with a very indistinct sub-marginal band of linear, lunular spots margined outwardly near the anal angle by paler colour: a black spot crowned with orange near the base of the tails, a similar black spot at the anal angle crowned with pale blue: the space between the spots irrorated with blue.

Exp. $1\frac{8}{10}$ inch. Hab. unknown.

This beautiful species has been kindly lent to me by Mr. Druce, to be figured in the next part of the "*Lycænidæ.*"

Oatlands, Weybridge: *August*, 1872.

*Change of Nomenclature.*—The genus *Phlœophilus* (script. *Phloiophilus* in error) of Stephens, of which the British *Edwardsii* apparently remains the sole exponent, having been published in Illustr. Mandib. iii, 1830, is three years anterior in date to *Phlœophilus* (*Anthribidæ*), characterized in Schönherr's Curc. i, p. 156, 1833. The latter must, therefore, be re-named, and I propose to call it *Lemmophilus*,—a word of the same signification.—E. C. Rye, 10, Lower Park Field, Putney, S.W.: *August*, 1872.

*Notes on captures of Coleoptera in the New Forest.*—At the risk of repetition, I send a few notes on the *Coleoptera* observed, during a fortnight's stay at Brockenhurst, from the middle of June to the beginning of July, in company with my friend, Mr. J. S. Allin, thinking that, although nothing very rare occurred to us, they might prove interesting to some of the readers of the Magazine.

I again found most of the species recorded by me in E. M. M., vol. viii, p. 85, but failed to obtain more *Emus* or *Colydium* (my principal quests), not for want of looking; but several other species occurred that I had not observed in my previous visits.

I could not come across any oaks fit to work, in spite of tramping many miles; and, to this, I suppose must be attributed, the absence of the better oak feeding species from my not very extensive list; nor could I find any good *Cossus*-infected trees.

Stalking flowers, day after day, failed to produce *Anthaxia*: I suppose we were too late for it.

All the wood we could find to work at were two young dead beech trees (which were very productive), a few logs occasionally, and the usual " moors " or stumps.

Felled trees are not left about for years on the ground (the woodmen tell me) as they used to be some years back, in Turner's time; consequently beetles are difficult to obtain; in fact, two or three hard days' work in the forest produced almost *nil.*

The better species we found I note below:—

*Notiophilus rufipes; Pterostichus lepidus* (rarely) and *dimidiatus* (pretty commonly) in sand-pits. *Calosoma inquisitor*, on old sugar; *Cychrus rostratus*, swept up; *Homalota elegantula*, Bris., one specimen swept off fern towards evening; *Mycetoporus clavicornis*, by evening sweeping; *Philonthus splendidulus*, tolerably common under bark and in rotten wood; *Stenus lustrator*, two or three specimens swept off fern; *Protinus atomarius*, by evening sweeping; *Euplectus Dennyi*, rarely, under bark; *Scydmænus exilis*, under bark; *S. denticornis* and *angulatus*, by evening sweeping; *Amphicyllus globus*, with one specimen of a small pale unicolorous variety, by evening sweeping: *Liodes orbicularis*, two or three by evening sweeping; *Anisotoma nigrita*, usually somewhat rare (seen alive for the first time here by me) seemed generally distributed over the forest, and not rare, as by sweeping from sunset till dusk, in the rides of the plantations, we managed by hard work to secure a good number, generally about a dozen in the two or three hours we worked for it of an evening, and it was far commoner than *calcarata*. *A. dubia* and *litura* and *Cyrtusa pauxilla* (*minuta*, W. C.) also occurred sparingly. *Colon brunneum*, a few, in company with the *Anisotomæ*; *Phalacrus substriatus*, one specimen, swept up; *Meligethes pedicularius*, which seems to be the commonest species of the genus (except, of course, *rufipes*, *æneus* and *picipes*) in the New Forest, as it occurred freely by sweeping in the rides of the enclosures; *M. umbrosus*, *Ips ferrugineus*, *Rhizophagus cribratus*; *Thymalus*, tolerably common in its usual habitats. *Synchita mediolanensis* again occurred sparingly, under the bark of a small standing but dead beech tree. *Læmophlœus bimaculatus*, two or three, *Lathridius carbonarius*, a few, and *Diplocœlus fagi*. The latter species (seen by me alive for the first time) occurred in quantity, in company with the three preceding species, under beech bark, apparently preferring the looser part, especially near the ground. *Trachys troglodytes*, one specimen, by casual sweeping; *Microrhagus pygmæus*, a few specimens by sweeping fern, &c.;—one little patch of long grass invariably producing it. *Elater elongatulus*; I swept up, off fern, a single ♀ example, which sex is very much larger than ♂, and apparently rare in British collections. *Athoüs rhombeus*, two or three specimens, dug out of a rotten oak log. *Corymbites bipustulatus*, by sweeping. *Sericosomus brunneus*; rarely swept up. *Malthodes dispar* rarely, and *M. atomus* commonly, by sweeping in plantations. *Dasytes niger*; this scarce species, which occurred to me very rarely last year, turned up in quantity one very hot day, in flowers of *Helianthemum vulgare*, *Potentilla reptans*, *Leontodon taraxacum* and *Hieracium*, on the banks of a dry ditch, outside a young plantation of Scotch fir; it seemed very local, as I had been about the forest a week and had only picked up two or three specimens previously. A second visit to the locality only produced a few specimens, owing, perhaps, to it being very windy at the time. It also occurred very rarely on stumps, in which I expect it breeds. *Aspidophorus*, swept up rarely. *Salpingus ater*, by sweeping. *Abdera b fasciata*, rarely, by sweeping. *Phlœotrya Stevensii*; we found about a dozen of this, with many more in the earlier stages, in one rotten oak log. *Conopalpus testaceus*; I managed to secure a good set of this by chipping away at the rotten, large broken-off oak boughs, and also in the decayed part of the trunk, near the ground, of a standing oak; I have also bred two or three, since I have been back, from pupæ taken. This species was not accompanied by *Vigorsii*. *Tomoxia biguttata*, tolerably common, as before, running about in the hot sunshine, and settling on stumps and logs. *Tychius* 5-*punctatus*, tolerably common, by sweeping two species of vetch in plantations; one day I took about 40 specimens on one small patch of the plant; but it is very difficult to secure in good condition, more than half of the specimens taken being rubbed at the time of capture; it is also very wiry-legged, wanting to remain in laurel some time before it will set easily. Of *Rhinoncus denticollis* I swept up three or four specimens, in company with the *Anisotomæ*. *Cœliodes subrufus*, occasionally by sweeping. *Tomicus Saxesenii*, by sweeping. *Strangalia nigra*, tolerably common in flowers, &c. *Leptura scutellata*, a number, dug out of the same stump as that in which I found *it last year*. *Anoplodera sexguttata*, rarely, in flowers. Chætocnema confusa, by sweeping. *Engis humeralis*, a few specimens under bark of beech, in company with *Synchita*.—G. C. CHAMPION, 274, Walworth Road, London, S.: *August 2nd*, 1872.

*Cicada anglica, Curtis*.—I took two specimens of this very conspicuous insect in the open forest near Brockenhurst, flying about with a considerable whirring noise in the hot sunshine, and settling on fern.—ID.

*Capture of Lasiosomus enervis, H.-Schf., near Chatham*.—In the middle of last July, whilst sweeping for beetles on the chalk near Chatham, I captured a single example of *Lasiosomus enervis*, recorded as British in E. M. M., viii, p. 26, on the authority of a single specimen taken by Mr. Wollaston (locality unknown). The same day I brushed up two sporadic examples of *Ceuthorhynchideus hepaticus*, and *Choragus Shepherdi, Trachyphlœus spinimanus*, &c.—ID.

*Duration of the egg-state of Chrysopa septempunctata, Wesmaël*.—The fifteen ova, laid between 9 and 9.15 p.m. on the 16th instant, mentioned ante, page 61, hatched between 7.50 and 8 o'clock on the evening of the 24th instant. The larvæ spent the following night in one congregation; in the morning they separated, taking no further heed of each other.—ALBERT MÜLLER, South Norwood, S.E.: *July 31st*, 1872.

*Hemerobius inconspicuus (McL.) at Rannoch*.—Mr. W. C. Boyd, who made an entomological excursion to Camachgouran early in July, had the kindness to pin for me some miscellaneous Neuropterous insects. Among them was one example of this very distinct, but little-known species. It is, unfortunately, no longer in existence, having, with others, been destroyed by some unknown marauder in my setting-case. —R. MCLACHLAN, Lewisham: *10th August*, 1872.

*A new British Crambus*.—I have pleasure in recording the capture by my friend, Mr. C. A. Briggs, of an example of *Crambus verellus*, Zk., a species new to the lists of this country, aud the place of which in its genus is immediately after *C. falsellus*. It was taken on the 21st July last, at Folkestone. The localities given by Staudinger are Germany, France, and Galicia. Mr. Briggs has kindly enriched my collection by presenting me with the specimen.—HOWARD VAUGHAN, 54, Chancery Lane, London, W.C.: *August 1st*, 1872.

*Vanessa Antiopa at Great Yarmouth*.—A specimen of *V. Antiopa* was taken last Friday evening on the Caistor Road, Yarmouth, by Mr. John Hallett White. A strong easterly wind had been blowing in-shore for about 24 hours previously.—A. G. BUTLER, British Museum: *29th July*, 1872.

*Plusia orichalcea at Glanville's Wootton, and other captures of Lepidoptera*.—The following are the best of my captures since April:—*Eubolia lineolata, Theristis caudella* and *Gelechia brizella* in South Devon during May. *Anchylopera diminutana* was absolutely the only thing to reward me during the wet and cold month of June. In July, however, I took *here* on the 13th, a most beautiful specimen of the rare *Plusia orichalcea* off the flowers of meadow-sweet; the species had not occurred here for 20 *years*. I have also taken *Aplota palpella, Teichobia Verhuellella, Gelechia subocellea, &c., &c.*—*C. W. DALE,* Glanville's Wootton, near Sherborne: *1st August*, 1872.

*Notes on collecting in the fen-district.*—Some spare evenings devoted to collecting in the fens round Norwich last summer produced such satisfactory results, that I am induced to think a few notes on them may not be uninteresting.

The spring being cold and the season late, my first visit was not till May 29th, when I had the gratification for the first time of seeing *Papilio Machaon* at large in its favourite haunts. It must be confessed, however, that its appearance when on the wing is not equal to what might be expected of so fine an insect. It has much of the fluttering habit of the *Pierides,* and when flying about and settling on the flowers of *Pedicularis palustris*—a favourite plant—is hardly noticeable at a moderate distance. On this occasion the wind was strong, and probably prevented them from flying freely. A female rising from some plants of *Peucedanum palustre* guided me to the discovery of a couple of eggs on the under-side of the leaflets. Close by was a lovely larva of *Orgyia gonostigma* (which produced as ugly a ♀ moth in June), but, except a stray *Euclidia glyphica,* and a yellow ♀ *Clepsis rusticana* which would keep down among the long grass, nothing more was to be obtained. The wind was altogether too cold.

A week later, although the weather continued cold, a few *Micros* began to venture out wherever a few bushes afforded shelter from the north wind, and I took my first specimens of the pretty little novelty, *Phoxopteryx paludana,* along with *P. siculana, Penthina marginana, Chauliodus Illigerellus* and *Bucculatrix frangulella.* The *Peucedanum* afforded half-a-dozen more eggs of *Papilio Machaon,* the rearing of which has given no little pleasure to kind friends in distant parts of the country.

By the middle of June, insects were a little more plentiful. *Phoxopteryx paludana* was accompanied by *P. subarcuana,* both being almost confined to the wettest open places among the shorter rough grasses, *Pedicularis, Sphagnum,* &c., and as neither could be induced to show themselves till late in the afternoon, and even then kept among the herbage, hiding at the roots when pursued, it was a difficult task to secure a decent series. At the same time, *Eupœcilia griseana* appeared pretty commonly, and, very rarely, *E. notulana. Penthina marginana* had become common; a very beautiful variety of *Sericoris lacunana*—blackish, with lustrous lines—which seems peculiar to the fen district, was occasionally to be met with, and a few of the larger species, such as *Hydrelia unca* and *Acidalia immutata,* had begun to appear. Of the *Tineina, Nemophora metaxella* (which afterwards became very common), *Elachista cerussella* and *paludum,* and *Bucculatrix cidarella* flew in the shelter of the alder bushes, and *Glyphipteryx cladiella, Gelechia acuminatella, Lithocolletis quinqueguttella,* and the lovely little *Cosmopteryx Lienigiella* among the reeds, dwarf sallows, &c., in the open parts of the fen. In the tops of the dwarf sallow (*Salix repens ?*) were larva of *Clostera reclusa* and *Semasia populana,* and on the leaves of *Eupatorium cannabinum* the cases and large white blotches of the larvæ of *Coleophora troglodytella.* On the same leaves was occasionally to be seen the lovely longicorn beetle, *Agapanthia lineatocollis,* with its beautifully annulated antennæ extended in front.

June 27th was a white letter day with me. As usual, the wind was cold, but by good fortune I spied, on a blossom of *Carduus palustris,* a small, neat, narrow winged *Glyphipteryx*—*not Fischerella;* and, by searching the flowers and sweeping the rushes, I soon obtained a tolerable series. This proved to be *G. schœnicolella,* originally found by Mr. Boyd at the Land's End, and, as far as I am aware, never taken since, until I met with it in this distant locality. Then there was a great treat—the first sight of a living *Hyria auroraria,* and a more lovely creature one need not wish to see. But the most extraordinary part of the day's work was after the cold wind had fallen ; then, in a part of the fen ankle deep in water, creeping up from the tufts of a small rush, and fluttering among the reeds, was *Schœnobius mucronellus* in swarms. There must have been hundreds of them, nearly all males, and their flight lasted from 6 till 8 p.m. Their flight is fluttering and very weak, they never seem to rise above the tops of the reeds, and at the least alarm, tumble headlong into the thick tufts of rushes. At the same time, *Chilo phragmitellus* was flying commonly in dryer parts of the fen.

On July 1st, *Sericoris conchana* made its appearance, and with it the first lovely specimens of *S. Doubledayana* (E. M. M., vol. viii, p. 246), but they were rare, and little else was to be found except a specimen or two of *Hyria auroraria* and *Lobophora sexalata ;* and the afternoon being warm and enervating, I was glad to sit down on a convenient tussock of *Carex* and enjoy the delicious perfume of the Fragrant Orchis (*Gymnadenia conopsea*) growing around. Then was illustrated the proverbial luck of lazy collectors, for a snowy atom which came lazily flying by, proved to be *Opostega auritella.* As it grew dusk, *Herminia cribralis* flew up from the grass, and *Collix sparsata, Scotosia vetulata,* and *Pterophorus microdactylus* among the alder bushes, where also *Dianthœcia cucubali* and other *Noctuæ* were attracted by the flowers of *Lychnis flos-cuculi.*

A fortnight later, *Pœdisca oppressana* was to be found on the trunks of poplars ; *Hyria auroraria* showed a strong preference for certain spots where the herbage was half choked with *Sphagnum ; Sericoris Doubledayana* and *conchana* were not scarce, *Bucculatrix frangulella* was still out, and I saw (and lost) a specimen of the splendid little *Cosmopteryx orichalcea.* It was sitting on a grass culm, and skipped from blade to blade through the thickest tufts, but would by no means submit to capture. Long and earnestly I searched, but never saw another. At dusk, the first specimens of *Lithosia muscerda, stramineola* and *griseola* appeared, with *Nudaria senex ;* and, after dark, a lovely pair of *Scotosia undulata* (rare here), with *S. rhamnata* and *vetulata ; Leucania straminea* on reed, and *Pœdisca semifasciana* flying among the alders.

The next day, the Norwich Naturalists' Society took boats for a row on the *broads* (expansions of the river which extend into the fen), but Society excursions are not favourable to hard work, and little turned up besides single specimens of *Lobophora sexalata* and *Cidaria sagittata.* We saw, however, one of the remaining stations of that rare Norfolk fern, *Lastrea cristata,* in a place so admirably concealed that, without the assistance of the fen men, it would be next to impossible to find it. The ground near by was covered with *Lysimachia nummularia* in fullest bloom, the pretty marsh vetch (*Lathyrus palustris*) blossomed among the rank herbage, and the lesser reed mace (*Typha angustifolia*) fringed the shore.

On July 19th, the second brood of *Phoxopteryx subarcuana* began to appear, and *Gelechia rufescens, gerronella* and *ligulella,* and *Coleophora viminetella* were out. Worn specimens of *Sericoris Doubledayana* were plentiful, with *Crambus uliginosellus* and *selasellus* pretty common. All these were driven into hiding by a violent storm of rain between 7 and 8 p.m., but directly it was over, *Nonagria despecta, Eudorea pallida,* and *Opostega crepusculella* flew in abundance. After rain, however, collecting becomes exceedingly difficult, as the reed leaves carry so much water that the net requires wringing every few minutes.

Later in July and in the beginning of August, *Lithosia muscerda* became quite common, flying about the alder and sallow bushes at dusk; *L. stramineola* and *griseola* were much less plentiful, the latter being, curiously enough, the scarcest of the three; but *Nudaria senex* abounded so as to be a nuisance, and *Acidalia emarginata* was pretty common. *Pericallia syringaria* also occurred, with *Eupisteria heparata* and *Eupithecia tenuiata* and *subfulvata*. *Apamea fibrosa* and *Epunda viminalis* flew at night, and *Senta ulvæ* came to the lantern at midnight. The light also attracted various *Tortrices*, such as *Peronea hastiana*, *Ditula semifasciana*, and *Pœdisca semifuscana* in considerable variety, as well as *Pterophorus microdactylus*. At this time, the second broods of *Phoxopteryx paludana* and *siculana* appeared, flying at sunset, as well as *Peronea Shepherdana* among its food-plant, the meadow-sweet. By energetic and persevering sweeping of the alder bushes, a fine series of the lovely little *Bohemannia quadrimaculella* was secured; one specimen of *Gelechia subdecurtella*, and two more of *Opostega auritella* occurred, flying before dusk; and *Elachista paludum* (second brood), *Lithocolletis stettinensis*, *Acrolepia pygmæana*, *Laverna rhamniella* and *Depressaria conterminella* all appeared. *Crambus uliginosellus* was still common, flying at sunset, but badly used by repeated storms of rain and wind; and in the beginning of August its congener, *C. sylvellus*, began to appear. A couple of dragon-flies, carrying on rival collecting operations, fell victims to their temerity, and proved to be a scarce species, *Æschna rufescens*.

At this time the fens are being mown, and the larvæ of *Papilio Machaon* being fully grown, are constantly found by the mowers. These men say that they know directly they have disturbed one by its strong scent, which they compare to rotten apples. It is, however, much more like that of the pine-apple, and is given off very powerfully when the larva, by pressure between the thumb and finger, is induced to protrude the forked tentacle from its second segment. It would seem as though this perfume was voluntarily given off when it is alarmed by the sudden cutting of its food-plant. At the same time, the handsome larva of *Simyra venosa* is occasionally to be found feeding on reed (*Arundo phragmites*).

On August 16th, I joined my young friend Mr. Frank Wheeler, at the fen. He had been there all day, and had taken specimens of the (partial) second brood of *Papilio Machaon* on the wing, and also the larva of *Orgyia gonostigma*. When we had worked together for some time, he called my attention to a *Noctua* sitting on a reed stem, which I instantly recognised as a ♀ *Nonagria brevilinea* in decent condition. This might be called (in classic language) a *sell* for me, especially as we both worked long and fruitlessly for more. A few *Crambus sylvellus* occurred at sunset, *Nemotois minimellus* and *Glyphipteryx schœnicolella* (second brood) on rushes, and *Gelechia muscosella* and *sororculella* flying. At night, worn specimens of *Lithosia muscerda* condescended to patronize our sugar, as did *Noctua umbrosa* and *Apamea fibrosa*.

Later in the month, *Semasia populana* made its appearance, and I found one specimen sitting in an open flower of the lovely grass of Parnassus (*Parnassia palustris*). A second or third brood of *Penthina marginana* was out, and I picked up a specimen of *Laverna phragmitella*, *flying* (a most unusual circumstance for this lazy species) near some plants of *Typha latifolia*.

At this time, stray specimens of a second brood of *Schœnobius mucronellus* made their appearance, and plenty of *Phibalapteryx lignata*.—CHAS. G. BARRETT, Norwich: 12*th May*, 1872.

*Description of the larva of Cloantha solidaginis.*—For the opportunity of making acquaintance with this long wanted larva, I am indebted to the kindness of Mr. George Norman, of Forres, who sent me two eggs on the 25th of April last. These hatched in a day or two, and the newly-emerged larvæ were of a dark slaty-green colour, with the head dark brown. By May 4th, they had attained to a quarter of an inch in length, the ground colour being purple, with the dorsal and sub-dorsal lines pale grey, the (rather broad) spiracular lines white, and the skin shining. By May 24th, half an inch had been reached, and the ground colour had changed to a very dark chocolate-brown, with broad, bright yellow, spiracular stripes, the narrow dorsal line being then of a pale slaty-blue. Several days after this, one of the larvæ died: the remaining one, however, fed on satisfactorily, and by June 4th, its colour had again considerably changed, the ground being dark purplish-brown (darker on the sub-dorsal than the dorsal region, which had a faint pink tinge), the head dark brown, smooth and shining, the dorsal stripe dark brown, with a distinct pale bluish-grey central line, but no perceptible sub-dorsal lines, only a broad, clear, pale yellow stripe along the spiracular region; the spiracles and trapezoidal dots grey, and the ventral surface, legs and prolegs of a uniform dark purplish-brown. By the middle of June, it was full-fed, and the adult larva may be described as follows:—

Length about 1½ inches, and of average bulk in proportion. Head globular, the same width as the second segment. Body cylindrical, and of nearly uniform width throughout, being attenuated very slightly towards the head. Skin smooth and soft.

The ground colour dark olive-brown, strongly tinged with purple. Head smooth and shining, pale brown; the front of each lobe dark sienna-brown. Dorsal line dull slaty-blue, edged with smoke-colour; no perceptible sub-dorsal lines, but a broad, clear pale yellow stripe along the region of the spiracles, edged on the upper side with a very fine black line, on which the reddish-brown spiracles were placed. On the front of the second segment, a conspicuous black mark, and a transverse black mark on the hinder part of the twelfth segment. Trapezoidal dots very distinct, pale yellow. Ventral surface purplish-brown, tinged in the centre with green, gradually becoming darker towards the pale spiracular band. Legs brown and shining.

The larva, both in the adult and earlier stages, is very beautiful; the single one reared went down on June 19th.

At first, the larvæ fed on whitethorn; but, on being supplied with bilberry, evidently preferred that plant, which is, in all probability, the natural pabulum of the species.—Geo. T. Porritt, Huddersfield: *August 10th*, 1872.

*Natural history of Carsia imbutata.*—For eggs of this species I am indebted to Mr. E. Birchall and Mr. G. T. Porritt, who sent me a good supply in August, 1871.

These eggs were kept out of doors through the winter, and the larvæ began to hatch towards the end of April, 1872,—that is to say, some of them did so; a great many must have died in the egg, and many more soon after hatching, for in the first week of May I found but two alive. The wintry time in April, succeeding the more open weather of the preceding months, was, I believe, the cause of this mortality, and before long killed also one of the two survivors; and yet it has so often happened of late that I have had to carry on my investigations with a single larva out of a numerous brood, that perhaps I ought not to blame the weather so much as some fault of my own,—possibly my bungling may be one link in the chain of causes which work together in the natural selection of the individuals, whose looks and doings get chronicled in this Magazine.

My one larva of *imbutata* grew slowly, feeding on *Vaccinium vitis-idæa* at first, and afterwards on *V. oxycoccos*, kindly sent me by Mr. Birks, until June 16th, when it spun up; the moth appeared July 10th.

The egg is not remarkable; it is of an obtuse oblong shape, flattened, with scarcely any gloss on the shell, which is neither reticulated nor pitted; the colour at first pale yellow, afterwards deeper yellow, and not changing much again when the larva is near hatching.

The young larva is dull yellowish or greenish, with a pinkish head, and with fine dorsal, and broader sub-dorsal brownish lines; as it grows, it becomes of a tender greenish-yellow, and the lines more reddish, assimilating in tints to the young leaves of the food-plant, with their reddened edges and tips; afterwards, by degrees, the whole back of the larva becomes brownish, leaving the under side still yellowish.

The length of the full-grown larva is not quite five-eighths of an inch, the figure somewhat stoutish, uniform in bulk throughout, but its habit of holding the head a little downwards and folding all the anterior legs close up to it, gives a clubbed appearance to the thoracic segments when seen sideways, the back of those segments being arched or humped up; the colour all over the back to near the spiracles is of a rather deep brownish-red, with a very fine dorsal and sub-dorsal line of blackish-red; along the spiracular region is a broad, brilliant yellow stripe, separated on the thoracic segments from the red above by a black edging, but this only appears faintly at the segmental folds for the rest of its length; this broad yellow stripe is blotched at the folds between segments 6—10 with beautifully softened blush-like spots of red, the black spiracles standing in the clear yellow spaces; below this, comes a line of blackish-green, very fine on the thoracic segments, undulating in its course, and thickening at the folds, becoming gradually tinged with red, till at the tenth segment it is a red stripe; the belly is pale greenish-yellow, with a central paler line, bordered by darker lines; the head is dull pinkish-red on the top, paler than the colour of the back, becoming paler still near the mouth; the ventral legs are pinkish-red; the anal legs brownish-red like the back, with a yellow line down them; the usual dots are small in size, yellow, ringed with brown.

From the look of the young larvæ, I was led to believe that, had I reared more than one example, I should have seen some variety of colouring.

When I found my larva ready to change, I put it into a large chip box, with about half-an-inch of fine loose soil, and it spun its cocoon under this, attaching it to the bottom of the box; the cocoon is very weak, being formed of particles of soil spun together with not much silk; the pupa is slender in form, three-eighths of an an inch in length, the head-piece distinctly shaped, the antennæ-cases ending in a little bifid projecting knob or spike, the skin shining; the colour of the head and wing-case was probably somewhat olive-brown when the insect was within, the abdomen of a more reddish-brown.

The imago I bred was rather small, but most beautifully coloured.—J. HELLINS, Exeter: *August 8th, 1872.*

*Extract from Dr. Laboulbène's opening address as President of the French Entomological Society.*—Let us re-commence our labours, confident in the future. Let us insist upon working unexplored fields; let us seek the best subjects for study; let us renounce devotion to doubtful species established on simple varieties.

The orders of insects other than *Coleoptera* and *Lepidoptera* are too much neglected. May our young colleagues adopt these neglected orders by preference; may their labours make known to us all the *Orthoptera*, *Neuroptera*, *Diptera*, and *Hymenoptera* of our country. Let us sincerely abstain from making descriptions of all aberrant varieties, at the end of which one reads the stereotyped phrase—"This is perhaps only a variety of such a species."

The *Micro-Lepidoptera* are more sought for than formerly, but how much have we yet to do to make them well known! I ask our lepidopterists to quit the beaten track of the large species for the unknown, and so attractive, world of small ones.

That which we must have, especially among such of us as live in the country, is patient observers of the manners of insects. On this, entomological science is established. The best executed 'faunæ' are only descriptive catalogues, and means by which to recognise species, of which the history is only rendered complete and definite by statements of the earlier stages and habits. The description of larvæ and metamorphoses does as much for science as that of the perfect insects. Methodical classifications will be finally established on life-history, and not on a single state of the insect.

One word more, gentlemen, to tell you that we ought to aim at the progress of, and seek to maintain, the elevated rank we occupy in Zoology; but let us remember that *sterile agitation is not veritable progress.*

(Printed in the bulletin of the French 'Annales' for 1872, p. iv. Most of Dr. Laboulbène's observations are equally applicable to entomologists of any nationality. —Eds.).

*New names for a long known Lepidopteron.*—In the last Number (August, 1872) of the 'Annals and Magazine of Natural History,' Mr. A. G. Butler describes and figures a new genus and species of the family *Notodontidæ*. The genus is named *Tarsolepis;* the species *T. remicauda.*

The same insect, however, is already figured (in 1806) by J. Hübner, in the second volume of his 'Sammlung exotischer Schmetterlinge' (plate 197) under the name *Crino Sommeri;* and, as belonging to the *Noctuæ genuinæ.* Herrich-Schæffer (Sammlung neuer oder wenig bekannter ausser-europäischer Schmetterlinge, p. 11) changed the generic name, as used before, to *Crinodes*, and placed the insect in the family *Notodontina.* Walker, on the other hand, in his 'List of the Specimens of Lepidopterous Insects in the Collection of the British Museum,' part xiv (1858), p. 1346, brings the genus *Crino*, Hübn., to the Noctuid family *Ophiusidæ*, which, however, is rectified in the 'Stettiner entomologische Zeitung' for 1862, p. 477, by K. Dietrich, who regards it, and most justly, as a Notodontid genus, nearly allied to the genera *Phalera*, H.-Sch., und *Datana*, Walk.

I have seen five specimens of *Crinodes Sommeri*, Hübn.; four females in the collection of the Royal Museum at Leyden (placed, under the name *cilaminata*, de *Haan, i. l.*, in the genus *Nystalea*, Gn., at present also a Notodontid genus), and one male in Mr. P. C. T. Snellen's collection at Rotterdam, all sent over from Java. Walker (*l. c.* p. 1348) makes mention of a specimen from Rio Janeiro in Mr. Fry's collection.—C. RITSEMA, Leyden: *August 10th*, 1872.

*Notes on a paper entitled 'Die schweizerischen Arten der Bienen-gattung Anthidium,'*[*] *[issued] by Walther Schmid, Oberfoerster.*—"Heft" No. 9, vol. iii, of the 'Mittheil. der. Schweiz. entomol. Ges.' contains a paper under the above title, of which Herr Walther Schmid is given as the author, and upon which I wish to make some observations. In these I will endeavour to shew Herr Schmid every favour, so far as is consistent with the obligations due to the memory of the late Dr. Imhoff, who laid the foundations of what I know in entomology, which may not be very great, but still is sufficient to recognise the literary performance of the hand that built it up, even when, as in the present instance, that performance appears to have been "improved upon" by others. Hymenopterists in general, and the writer in particular, would be glad to know if Herr Walther Schmid has used MSS. notes in the handwriting of Dr. Imhoff, or if he is prepared to assert that the above paper from beginning to end is his own original work. If no answer be forthcoming to these two queries, people will draw their own conclusions.

In the meantime, it is advisable to place the following facts on public record:—

(1). Herr Schmid paid a visit to the house of Dr. L. Imhoff after this gentleman's death, and obtained permission to look over such of his literary remains as concerned entomology.

(2). Herr Schmid had access to the types labelled and named by Dr. Imhoff, and deposited in the Museum at Basle.

(3). Herr Schmid, previously to the publication of the paper in question, has not published a single scrap on entomology.

Viewing the aforesaid paper in the light of these facts, what do we find?—First tokens of the most abstruse knowledge of a genus, the individual species of which are not easy to determine; and, secondly, plain signs that the veriest tyro in entomological matters has "had a finger in the pie." Tokens of special knowledge are also displayed in parts of the introduction, while other parts, such as the enumeration of the literature consulted, shew an unskilled hand at every turn, unless, indeed, we charitably call such slips as "Kirby, Monograph*ie*," "fabric*us*," "St. F*e*argeau," etc., errors of the press.[†] But for one thing the printers cannot be made answerable, namely, for the absence of all reference to the works of Nylander, Rossi, Jurine, and Linné, and of omissions like these no man of Dr. Imhoff's attainments could have been guilty. These and similar defective portions I willingly admit as being Herr Schmid's own doing, while, on the other hand, I emphatically ask who has written pp. 451—462? I shall be glad to learn that these pages represent the original thoughts and composition of Herr Schmid, and not, as I fancy, in part posthumous notes by Dr. Imhoff.

On pp. 462—474 we have the descriptions of 14 species of *Anthidium*, and of the allied *Stelis nasuta*, Latr. In reference to these descriptions, it will be well to remember that they have probably been written out from the original types, as labelled by Dr. Imhoff; indeed, in the case of *A. curvipes*, Imh., this is distinctly mentioned, although any allusion to Dr. Imhoff's labelled types is studiously avoided elsewhere. The question I put to Herr Schmid here is, has he named the species he describes, or has he relied entirely upon the types labelled by Dr. Imhoff? A distinct answer to this query will save much trouble to future investigators. By what appears on the surface, it seems as if the latter method had suited his convenience best; or, if he has critically tested the descriptions of the various authors, why not give the synonymy? Its absence in the majority of cases is a great drawback to the usefulness of the paper.

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[*] *cf.* a companion paper by Dr. L. Imhoff: 'Die schweiz. Arten der Gattung Andrena, Mittheil. Schweiz. ent. G.' ii, p. 33.—A. M.

[†] The 'Mittheilungen' are, nevertheless, conspicuous for such mistakes.—EDS.

Dr. Imhoff's name is mentioned three times only in the whole paper; surely he had a greater share in the collection of specimens than this figure shows. It would have been scant justice to a Hymenopterist of great fame to have acknowledged even such assistance.

Twice in the course of the paper "unsere Museum Sammlung" is mentioned, but it nowhere appears *which* of the (20 odd) Museums of Switzerland is meant. It is, therefore, needful to explain to strangers that Herr Schmid lives at present at Basle, and that Dr. Imhoff's types are kept in the Museum of that town, as I have said before.

At p. 470, we read under *A. oblongatum*, "Meine reichlich gelben *Arten* stammen meistentheils aus dem Unterwallis, die dunklern aus der hiesigen Gegend, doch fand ich hier [where?] schon dunkle und helle zusammen *in copulâ*." Surely, instead of "*Arten*," Herr Schmid meant to say "*Stücke*;" else the phrase has no sense in its present connexion. A species is not a specimen. The locality is, I presume, Basle.

The paper is accompanied by a folded double plate, owned to by Walther Schmid, and the authorship of which nobody who sees it is likely to dispute with him.—Albert Müller, South Norwood, S.E.: *July*, 1872.

## Obituary.

*Coleman T. Robinson.*—The American entomological publications have lately recorded the decease (the result, we believe, of a carriage-accident) of Mr. Robinson, the late President of the American Entomological Society. He was born in the State of New York in 1838, and, after having finished his education, and made a tour in Europe, &c., commenced business on the New York Stock Exchange, from which he retired a year or two since, having already amassed, it is said, an immense fortune. Notwithstanding his business engagements, he had acquired considerable entomological reputation through his papers on North American *Lepidoptera*, published chiefly in conjunction with his colleague Mr. Grote (with whom he visited this country about two years since), and he had recently turned his attention greatly to the *Tortricidæ*. A list of his separate writings, from the pen of Mr. Grote, is in the 'Canadian Entomologist,' vol. iv, No. 7.

His premature death is a great loss to entomological science, and will be deeply felt by his American colleagues. The Society of which he was President has of late, we regret to say, shown signs of a want of that vitality which characterized its commencement,—the result, probably, of limited funds. It is to be hoped that the loss sustained by Mr. Robinson's death may not further depress its energies.

# NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 1).

BY F. BATES.

ARYENIS, mihi, Trans. Ent. Soc., 1868, p. 309.

It was suggested to me by Dr. Le Conte, when going through my collection, that this genus should, by its elongate metasternum and winged condition, be placed with the *Epitragides* of Lacordaire. Dr. Mäklin, in the Stett. ent. Zeit., 1872, p. 247, has also expressed the same opinion, giving as its nearest ally the genus *Sphenaria* of Ménétries. I still think, however, that this genus cannot be removed from the vicinity of *Evaniosomus*, Guérin. The narrow, elongate head, with its supra-orbital carena; the strongly produced epistoma, uniformly continuous with the front; the elongate and very prominent antennary orbits, which are rigidly marked off from the rest of the head by a deep sulcus; the elongate palpi; the prothorax, with its pronotum continuous with its flanks; the elongate, slender tarsi (having the first joint of the two posterior pairs much larger than the last) channelled beneath and ciliate with short, spiniform hairs; are strong characters possessed by this genus in common with *Evaniosomus*. The eyes are certainly much larger, and are approximate beneath. The elongate metasternum and the wings are also exceptional; but even these characters are met half-way in the genus *Chorasmius* (a genus I have proposed—Trans. Ent. Soc., 1868, p. 310, note—to receive *Evaniosomus procerus*, Er.), which has the metasternum nearly double the length, as in *Evaniosomus*, and the wing-cases open (not connate). I possess, moreover, a second species of *Aryenis* (*A. Haagi*, mihi *i. l.*), which still more closely approximates this genus to *Chorasmius*, and, through the latter, to *Evaniosomus*.

I think it will be found that Lacordaire throughout his work has attached too much value to the relative length of the metasternum as a character in classification; certainly, to remove *Aryenis* from close proximity to *Evaniosomus* would be a violent severance of very natural affinities.

ANCYLOPOMA, Pascoe, Ann. Mag. Nat. Hist., 1871, p. 354.

This genus must be referred to the *Heterotarsides* of Lacordaire; it should be placed after *Anædus*, Blanch.

ACANTHOSTERNUS, Montrouz., = *Diphyrrhynchus*, Fairmaire.

This opinion, however, is dependent on the genuineness of so-called types I had from the collection of Doué.

ANIARA (Dej.) Lacord., = *Cenoscelis*, Wollaston, *Aniarus*, Gemminger, *Holaniara*, Fairmaire, = EUTOCHIA, Le Conte.

This genus of *Ulomides* was first briefly characterized by Lacordaire (Genera, v, p. 336, note [1859]) under the name given by Dejean. This name being already in use, Le Conte, in his Classif. Col. N. Amer., p. 238 (1862), substituted that of *Eutochia*. Wollaston, in his Col. Hesp., p. 179 (1867), described his genus *Cenoscelis*,* which he doubtfully referred to the tribe *Pedinides* (group *Platyscelides*) of Lacordaire. Gemminger, in his great Catalogue, alters Lacordaire's name into *Aniarus*: and, lastly, Fairmaire, in the Ann. Fr. 1871, p. 43, apparently not knowing what had been done before him, gives the name of *Holaniara* to the genus.

ONOSTERRHUS, Pascoe, Journ. Entom., ii, p. 451.

This genus, referred by its author to the *Pedinides*, must be removed to the group *Nyctozoilides* of Lacordaire. I possess an undescribed genus (*Hypocilibe*, mihi *i. l.*) from Australia, which clearly associates Pascoe's genus with *Nyctozoilus*, Guérin. This is another of the many instances in which apparently peculiar and isolated forms are brought into harmony by further discovery.

TRICHOSTERNUM, Wollaston, = *Trichopodus*, Mulsant.

EXERESTUS, mihi, = *Rhinandrus*, Le Conte, teste Le Conte.

It is quite possible also that *E. Jansoni*, mihi, = *R. elongatus*, Horn.

IPHTHIMUS CANCELLATUS, Montrouz.

Belongs to the genus *Dechius*, Pascoe.

NYCTOBATES ORCUS, Pascoe.

Belongs to the genus *Hypaulax*, mihi.

TENEBRIO CROTCHI, Wollaston.

This is not a *Tenebrio*, but belongs to the *Ulomides*, and will form the type of a new genus (*Pelleas*, mihi *i. l.*), which should be placed, I think, near *Ulosonia*. It is the *Tenebrio parallelus* of Dej. Cat., p. 226.

DOLIEMA, Pascoe, Journ. Entom., i, 1860, p. 50.

The *Adelina plana*,‡ Le Conte, of which I possess a type specimen, belongs to this genus, which must be placed near *Sitophagus*, Mulsant.

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* The singular form of the last joint of the labial palpi in this genus is peculiar to the ♂ ; a similar peculiarity in this organ exists in the ♂ of the cognate genus *Oligocara*, Sol.—F. B.

‡ *If it should be proved that* Fabricius' species of the same name (Harold and Gemminger's *Catalogue, p. 1987) is a true Doliema*, then Le Conte's name will require changing.—F. B.

SITOPHAGUS SOLIERI, Muls.

I have no doubt that this is identical with the *Hypogena complanata* of Dej. Cat. p. 220; and it is more than probable that the *Adelina farinaria* of Wollaston is also the same species.

ODONTOPUS PHYSODES and ASPERATUS, Pascoe, Ann. Mag. of Nat. Hist., 1871, p. 355.

Both these species belong to Dr. Mäklin's genus *Aspidosternum*, a genus of *Strongyliides*. The *O. physodes* I more than suspect to be the same thing as the *Lagria æruginea* of Gerstäcker, Peters' Reise, 1862, p. 295, t. 17, fig. 9.

ODONTOPUS SPECIOSUS, Pascoe, *l. c.*, p. 356, note, = *Aspidosternum cyaneum*, Mäklin.

SCOTÆUS, Hope, and EUCYRTUS, Pascoe.

Gemminger and v. Harold, in their Catalogue, have sunk the latter genus under the former, although the two are as distinct as well can be. It is difficult to conceive on what grounds these authors have, in this and a multitude of other cases, proceeded; it looks very like mere guess-work.

ADELIUM TRISTE, Montrouz.

Is a species of *Arcothymus*, Pascoe.

STRONGYLIUM ÆNEUM and MULSANTI, Montrouz.

These will form a new genus very closely related to *Titæna*, Erichs.; they have no relation with *Strongylium.*

STRONGYLIUM VIRIDIPENNE, Montrouz.

Is very near to, if not identical with, *Chariotheca*, Pascoe.

15, Northampton Square, Leicester:
*September 7th*, 1872.

## INSTRUCTIONS FOR THE COLLECTION AND PRESERVATION OF NEUROPTEROUS INSECTS.

### BY ROBERT M'LACHLAN, F.L.S.

The best aid and incentive to the study of any group of natural objects is the possession of a well-ordered collection, and any hints tendering to further this acquisition cannot but be of service. Taking this for granted, I propose to give here general instructions to those entomologists—few though they be—who turn their attention to that heterogeneous assemblage of insects known as the Linnean order

Neuroptera, believing also that some who have neglected this order for want of some general guide to the means of possessing the necessary collection, may be induced to turn their attention thereto if they learn something of the *modus operandi*. As the majority of these insects are aquatic in their earlier stages, the very excursions necessary for their collection cannot fail to be a source of enjoyment to all who can appreciate the beauties of natural scenery, for they must take the collector to the banks of rivers and lakes, reedy ponds and rushing waterfalls, localities upon the beauties of which the author of 'Rambles by Rivers' would have eloquently discoursed.

As the utility of all instructions depends upon their conciseness, I shall endeavour to concentrate these remarks as much as may be consistent with their usefulness, by laying down general hints, leaving the more minute particulars to be filled in by the accumulated experience of individual collectors; for, after all, experience is the only true guide,—*that* alone can help the entomologist to that correct appreciation of cause, effect, and probability, so essential to the success of the object he has in view. And though I especially address these notes to *British* entomologists, I shall embody therein more general instructions to collectors abroad, those who cannot find time for elaborate preparation of their specimens, and with whom the acquirement of large numbers of specimens and species is really of more consequence, both to themselves and to the entomologists who may benefit by their labours, than beauty of condition of a few examples. Specimens cannot be too perfect, or in too good condition; this I look upon as an axiom: yet it seems to me that the rage for 'perfect' specimens, so strongly marked in many entomologists of the present day, savours more of the amateur than of the student; and I confess that, for my part, I would rather have 50 species perfect enough to admit of a correct appreciation of their structure and peculiarities, than 10 so perfect that not a defect exists. I throw out this last opinion not as recommending carelessness of preparation, but as discouraging the craving for cabinet objects instead of materials for study. The student-entomologist should try to believe that "half a loaf is better than no bread," and not despise a specimen because a joint or two of an antenna, or a leg, &c., be missing.

## GENERAL OBSERVATIONS.

Before proceeding to consider the different families of Neuroptera in detail, it may be as well to give a few general hints that will apply to all.

NETS.—This subject may be dismissed in very few words. An ordinary butterfly ring-net is sufficient for almost every purpose; for colour I prefer white, and for material ordinary book-muslin, though something stronger is sometimes advisable for sweeping. The ring of the net should be of moderately large size to suit it to the capture of Dragon-flies by giving sufficient spread.

PINNING AND SETTING.—Almost all these insects should be pinned through the thorax between the anterior pair of wings, inclining the head of the pin slightly forward. As I take it to be almost useless to attempt to induce collectors of British insects to adopt other than *short* pins, I urge here only that the pin should be run through the body so far that at least one-third of an inch projects on the under side, and that the setting board be comparatively flat. By this means the legs, &c., which are most important members in the study of Neuroptera, and without which even the generic positions cannot in many cases be ascertained, are left free, and less liable to be broken off, and the wings touch the paper of the drawer or box in no part. I would earnestly beg all Neuropterists to eschew the plan adopted by many of our Lepidopterists, who so pin and set their insects, that when placed in the cabinet they look more like so many permanent rows of postage-stamps neatly gummed in an album, than collections of natural objects intended for purposes of study and hence liable to repeated removals, the legs, &c., being so hidden as to give an idea that these are absolutely of no consequence, and that everything depends upon the pretty colours or markings of the wings. Setting-boards with *square* grooves I hold to be infinitely preferable to those with the ordinary *rounded* grooves. My own British collection is set upon short pins, but if I had to re-commence to-morrow (which Heaven forbid!), I would carefully avoid these, use longer ones, and set the wings flat, after the method adopted by almost all except British entomologists. The advantages are infinite. The insects suffer little, if at all, from mites and other depredators; and, what is of paramount importance, the notes of the locality, date, &c., can be placed in neatly written labels upon the pin itself, and every specimen may also bear a name-label, a point of much weight in typical collections; furthermore, the insect is easier to examine under the lens. But some of our continental friends carry the use of *long* pins to an excess, beyond the bounds of reason or utility. A pin of about 1½ inch in length is quite sufficient, and it should be pushed through the insect *for fully two-thirds of its* length. It should be not too fine (a point upon which continental entomologists strongly err). Two sizes are enough for all ordinary purposes, and for my re-set foreign insects I use Nos. 2 or 3, and 16, manufactured by D. F. Tayler and Co. A strong pin renders the specimen much more durable, and I fancy the absurdly fine pins used on the continent have to some extent disgusted English entomologists with the high-setting there adopted: these can only be inserted in the cork by the use of the forceps *under* the insect, and even then we often see them bent into all sorts of zig-zags, to say nothing of the unavoidable jerking off of bodies, &c. For very minute insects it is always advisable to use short pins, such as Nos. 19 and 20, adopted by English Micro-Lepidopterists, and if the collection be otherwise set on long pins, then these short pins bearing the insects should each be stuck into a little oblong piece of white pith neatly cut with a very sharp thin knife (a razor will not do owing to its thick back), and this impaled on a long pin. The best kind of pith is that obtained from dead and dry stems of Jerusalem artichoke, which is of extreme whiteness, and does not change colour by age, the latter being an especial defect of elder-pith. In setting, the wings should be spread out with braces exactly as in butterflies and moths; but it is always desirable to leave a few of each species unset, so that on the pin they retain the natural position in repose. Setting-boards suitable for long pins are kept in stock by many dealers in entomological apparatus, or would readily be made to order; the groove should be very deep, leaving only enough cork to hold the pin firmly, so that the legs may suffer no injury. But I am always glad to receive these insects unset. When the collector occupies himself with other orders, and catches Neuroptera simply to oblige friends, he cannot be expected to waste time in preparing insects that are useless to him. The greater part relax very readily on ordinary damp sand, or in a zinc relaxing-box: Dragon-flies are especially tractable in this respect, and, when treating on them, I shall take occasion to point out, especially to foreign collectors, that these are even better if sent home not pinned.

CARDING.—On this point I shall say little, except to discourage, to the utmost, the adoption of the system. I look upon its application to almost any order as a modern innovation, which I would fain hope is on the wane, even among those inveterate "carders," the Coleopterists. To apply it to Neuroptera, is to render them almost *absolutely useless.* Nearly everything here depends upon the neuration *of the wings;* and this can, in most cases, only be properly traced by holding the insect to the light, the intricate veining being usually more or less pale, or even transparent. Carding can only be tolerated by the Neuropterist when applied to the preservation of minute apterous forms, such as some Psocidæ.*

PRESERVING IN ALCOHOL, &c.—As so much depends in many groups of Neuroptera upon the form of the genital organs and their secondary appendages, it is of much service if some specimens be placed in spirits of wine, or some analogous medium, so that these forms can be more reliably ascertained, and safer descriptions and drawings be made therefrom than can sometimes be had from dry specimens. But I confess to having a prejudice against collections consisting almost entirely of specimens in alcohol. The constant care necessary for their preservation is a great drawback, and can be only exercised in large museums, and, even in these, I think experience will prove that pinned specimens will stand a much better chance of a long existence than will those in alcohol; and this must not be lost sight of when typical collections are concerned. There is no reason why a pinned collection should not last for at least a couple of centuries, and be then of use to the student, if ordinary care be taken; but I much fear that the myriads of glass tubes with alcohol, &c., necessary for a large typical collection, would, with their contents, stand little chance of an existence for half that period. Hence, I look upon this mode of preparation as more adapted to temporary purposes. If the necessary descriptions or figures be once made, much is done, for the natural form of the parts can, in most cases, be traced in the dry insect; whereas, details drawn up from dry insects in the first instance, are often difficult of application to the actual condition as exhibited in moist preparations. Mr. Eaton strongly recommends using pure glycerine and water, the former being added drop by drop to a tube partly filled with water till it is full, and with the addition of a small drop of acetic acid, the tube being finally corked. And here I would urge my chief objection to moist preparations. If cork only be used, the spirit or other substance will quickly evaporate, and the insects be destroyed; and if hermetically sealed, the specimens are comparatively useless, for sufficient examination can seldom be made through the glass tube. Carefully prepared microscopic slides of the whole insect, or of the particular part to be examined, in Canada-balsam or glycerine, seem to me more likely to serve the purpose intended.*

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* In Coleoptera, "carding" has many serious disadvantages. Important characters are present in the "cushions" of the under-side of the tarsi, in the insertion of the coxæ, and in the abdominal segments, to say nothing of the mouth-parts. Some argue that all these difficulties can be met by gumming certain individuals on the back. But suppose the specimen *ventre à soleil* be not specifically identical with those *ventre à terre!* and this is an accident likely to occur to the most expert Coleopterist. An esteemed colleague, to whom I have often argued my objections to the carding system, suggests that the specimens can easily be "floated off" in water, and examined on all points. What unnecessary trouble! what bother over gum-beclogged tarsi, &c.! I often see carded Carabi; and, if the practice be not on the wane, as I think it is, I expect *to see a carded Goliath*-beetle!—R. McL.

Boxing, Killing, &c.—Most small species, when caught, may be placed in ordinary pill-boxes till arriving home from a day's excursion; but if the weather be hot, many of them are liable to die, dry, and get broken in the course of a long day. This applies especially to water-frequenting groups, for these part with their moisture very readily and soon become dry (Botanists experience a similar thing in drying water-plants for the herbarium). Therefore, it is often desirable to kill the insects as soon as caught, and pin them in a zinc pocket-box with damped cork. A quantity of small glass tubes with corks is a useful adjunct to the other apparatus carried by the collector. For killing, nothing is better than a "killing bottle" (such as is now supplied by any dealer), consisting of a short, wide-mouthed pomatum-bottle, into which is placed a small quantity of cyanide of potassium, this being covered with about an inch of plaster of Paris made into a thick paste, which soon hardens, through which the deadly cyanogen gas slowly passes. Such a prepared bottle will maintain its effect for several years, and the insects die almost instantaneously without becoming stiff. In the case of insects in small pill-boxes, it is advisable to place box and all into the bottle, having first made (for more rapid effect) a small incision with the point of a penknife in each lid. Those species that have no great amount of hairy clothing may be bottled from the net, remaining in the bottle until the time arrives for setting, but hairy species rub too much one against the other if this plan be adopted for them.

In bringing these preliminary remarks to a close, I would reiterate that *experientia docet* is the best motto for the collector. I have known men who have spent the greater part of a tolerably long life in going from friend to friend asking advice, dying before they could make up their mind which particular instructions to follow. I cannot imagine a more unhappy or useless existence. Any honest advice is worthy of consideration; it is for the individual originality of the recipient to apply or modify it to his best advantage.

The few remarks on breeding that may be hereafter made, will be of necessity second-hand, my own experience on this subject not being sufficient.

(*To be continued*).

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* Foreign collectors often send home beetles and other hard-bodied insects in spirits. This *plan should not* be applied to Neuroptera, unless on the before-mentioned principle, that "*half a loaf is better than no bread*." *or for special purposes.* Those with hairy bodies or pubescent *wings are much injured in spirits.*—R. McL.

# THE RECENT INVASION OF GREAT BRITAIN BY *VANESSA ANTIOPA.*

### BY H. T. STAINTON, F.R.S.

While the circumstance of such an influx amongst us of *Vanessa Antiopa* as has not occurred within the memory of the "oldest entomologist" is still fresh in our recollections, I wish to call attention to the quarter whence probably these invaders have come.

When, 13 years ago, writing "On the Geographical Distribution of the British Butterflies" (Trans. Ent. Soc. Lond., new series, vol. v, p. 234), I noticed, with reference to "the three stragglers in this country," that *Pieris Daplidice* and *Argynnis Lathonia* seemed confined to the southern counties of England, not ranging north of Peterborough, but that "*Vanessa Antiopa* is most plentiful between the Humber and the Tyne, and has more than once been noticed on the north side of the border."

The inference I had drawn from this, though not then expressed, was, that if *Daplidice* and *Lathonia* came to us from France, *Antiopa* more probably came from Norway.

If the specimens of *Antiopa* (seen or caught) recorded in this Magazine be arranged in the order of the latitude of their localities, we get the following result:—

Folkestone 1, *Dover* 2, Tunbridge Wells 2, Copthorne 1, Box Hill 1, *Herne Bay* 1, Eltham 1, Lewisham 1, Twickenham 1, Erith 1, Hyde Park 1, Highgate 1, *Southend, Essex* 1, Totteridge 2, Hitchin 2, Cambridge 4, Ramsey 1, Chatteris 2, *Yarmouth* 1, Norwich 6, Leicester 1, Barnsley 3, Huddersfield 1, Cleckheaton 1, *Hull* 1, Bretton 1, Leeds 1, York 1, Darlington 1, *Saltburn* 1, *Forres, Morayshire* 2.

The italics indicate localities on the coast,—and Dover, Herne Bay, Southend, Essex, Yarmouth, Hull, Saltburn, and Forres are all on the East coast.

Many of the captors have noticed the whiteness of the borders, and I should be very glad to hear whether *any* of the specimens lately caught *have pale* yellow borders.

Godart, who wrote in 1820, speaks of "la bande jaunâtre," and indicates the insect as being common near Paris. It would appear, however, from his remarks, that spring-caught specimens had white borders; and Berce, writing in 1867, says of the hibernated specimens, that their yellow margin has become white, "leur bordure jaune a passé au blanc."

In Belgium, the insect is described as "common in the wooded mountains of the Ardennes, at Spa, &c. Tolerably rare in the gardens of the other provinces of the country, where it is found on fruit trees" (Annales de la Soc. Ent. Belge, I, p. 23); and we also read there that the hibernated specimens which appear in April, "ont alors la bande terminale blanche," implying that the autumnal specimens have yellow borders.

In Holland, we read in Snellen's 'De Vlinders van Nederland,' p. 37, that the border of the wings is pale yellow or white, "lichtgeel of wit," and that the insect occurs throughout the country, and is everywhere scarce.

Linné, in his 'Fauna Suecica,' speaks in the diagnosis of "limbo *albido*," but in the description given he says "margine *albo*." Zetterstedt, in his 'Insecta Lapponica,' also uses the adjective *white* to express the colour of the margins, and mentions the insect as no rarity in Lapland, though *Io* and *polychloros* do not extend so far north. Wocke, in his 'Notes on Norwegian Lepidoptera,' says (Stett. ent. Zeit., 1864, p. 173), "hibernated specimens of *Vanessa Antiopa* were not scarce at Sigstadt and in Gudbrandsdal," but does not mention the colour of the margins.

The dates of the occurrence of the various specimens have not been always noticed; but, from those recorded, I collect the following:—July 26th; August 21st, 22nd, 23rd (2), 24th (8), 25th (3), 26th (2), 28th (2), and 29th; September 1st, 2nd, 3rd, 7th, 14th, and 15th; the numbers in parentheses representing the number of specimens captured or seen when more than one.

It would thus appear that the solitary specimen recorded last month has no connection with the recent invasion, of which the first specimen was noticed on the 21st August, the maximum was attained on the 24th, and then the specimens seem speedily to diminish in the early days of September.

One theory is, that the specimens are already hibernating; but we are perhaps hardly sufficiently acquainted with the habits of the insect to say whether, like *polychloros*, it hibernates early, or whether, like *Atalanta*, it hibernates late: in the latter case, we should expect stragglers to be met with on ivy-bloom. But there can be very little doubt that hibernated specimens will be met with next spring.

In France and Belgium, we find that the borders of the wings should now be "yellow;" and the insect is scarce in those parts of Belgium nearest to us. In Holland, we find that the borders of the wings should be "pale yellow or white," and that the insect is every where scarce; but in Norway, Sweden, and Lapland, we find the insect "no rarity," and "not scarce," and the borders of the wings white.

That migrations of butterflies sometimes take place is indubitable. In 'Kirby and Spence' (7th edition, p. 296), we are reminded that "a migratory column of *Vanessa cardui*, of from ten to fifteen feet in breadth, and the passage of which occupied two hours, was observed in 1836, in the canton of Vaud, Switzerland;" and, though the intervening 300 miles of sea seems to place an impassable gulf between Norway and our Eastern coast, I still incline to the opinion that the recent invaders have come to us from Scandinavia.

The possibility of the insects now settling here is, however, still a subject for contemplation, and I have already received enquiries as to the actual food of the larva; most authors agree in giving birch, poplar and sallow, as well as willow, as the food of the larva; but more than one author mentions that the larvæ feed at the very summit of the trees. The larva I saw at Andermatt (Ent. Mo. Mag., vol. vii, p. 109) was on *a little willow*, and *not at the very summit.*

Mountsfield, Lewisham: *September* 16*th*, 1872.

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*Vanessa Antiopa at Hitchin.*—I observed a specimen of *V. Antiopa* last Saturday, the 24th inst., and, after a long chase, it escaped. Mentioning the matter to an entomologist here, I could not persuade him that I had not been mistaken, for he thought I had been deceived by one of the day-flying moths. To-day, whilst walking over his farm, he observed a very fine specimen of *Antiopa*, and gave chase, but, chancing to stumble in his pursuit, the *Antiopa* escaped, and will, I hope, breed in this locality. I am no stranger to this insect, having reared numbers from the larvæ, in Western Canada, on weeping willow.—Frank Latchmore, Hitchin, Herts: *August* 28*th*, 1872.

*Vanessa Antiopa at Lewisham.*—My neighbour, Mr. P. H. Desvignes, brought me a living *Antiopa* on the 25th inst., which he had caught in his garden. He had seen the insect two or three days previously, but his first attempts at capture had always been unsuccessful. The specimen has every appearance of having hibernated.—*H. T. Stainton*, Mountsfield, Lewisham, S.E.: August 31st, 1872.

*Vanessa Antiopa near Erith.*—On Saturday last, August 24th, a specimen of *V. Antiopa* was taken here by Master N. Budden. It is worthy of remark that last year *Deiopeia pulchella* was taken by a little girl within a few hundred yards of the same spot.—J. G. Wood, 9, Erith Road, Belvedere, S.E.: *August 28th*, 1872.

*Vanessa Antiopa near Herne.*—This afternoon, whilst walking with my brother through the Blean Woods, at about 200 yards distance from the "Fox and Hounds," we came suddenly upon a large dark butterfly, which, upon being disturbed, flew rapidly past us: for the moment I took it to be a large specimen of *Limenitis Sybilla*, but my brother, who saw it more distinctly than I did, assured me that it was a Camberwell Beauty; we followed it up for a short distance, when I had a second view of the insect, which flew past within easy reach of a net, had I but had one with me; there could be no mistake about it this time, for we both distinctly saw the white border and deep chocolate tint of *V. Antiopa*: it appeared to be in very good condition.—A. G. Butler, Herne: *August 29th*, 1872.

*Vanessa Antiopa near Norwich.*—It will doubtless prove of interest to my brother entomologists to be informed that this scarce butterfly (Camberwell Beauty) has again put in an appearance in this county, and that not singly. I had the good fortune to capture, on the wing, a female example in good condition on the 21st inst., and also made an unsuccessful attempt to net another shortly afterwards. On the 23rd, I again visited the same spot, and having read of the insects' partiality for sweets, I also took my sugaring pot with me. After well dressing some of the trees near at hand, I was rewarded by capturing two more beautiful specimens. On the 24th, I took a fourth example. They were all in such perfect condition, that I imagine they could not long have emerged from the chrysalis. As far as I can ascertain, the occurrence of so many of this rare insect at one time has not been recorded since the year 1847.—Theodore H. Marsh, Cawston Rectory, Norwich: *August 26th*, 1872.

P.S.—August 27th, 1872.

Since despatching my notice of the capture of four examples of *Vanessa Antiopa*, two more have been taken in the same locality,—one by myself, and the other by my friend, the Rev. G. Norris, who accompanied me. They were male and female, and the latter has since ejected an egg, which is of a dull black colour, nearly round, but with a slight indentation on the top, and adhering to it are a number of black and grey hairs or scales. Should I be fortunate enough to get a larva from it, I trust to be able to record its appearance and habits.—T. H. M.

*Vanessa Antiopa in Morayshire.*—After having given me many an agreeable surprise in *Noctuæ*, my favourite Cossus-birch to-day fairly stunned me by yielding a magnificent pair of *V. Antiopa.*

Passing the tree, I saw a large butterfly flitting about which I at once recognized, and leaving a friend to "mark down" in case it wandered, I ran into the house for my net, when I soon had the beauty safe. Whilst engaged in showing the insect to several people who were attracted to the spot by my movements, my eyes wandered momentarily to the trunk of the birch again, and here another beauty sat expanding and closing its wings. This one allowed me to touch it with the net before it would take wing. Both are quite fresh specimens, and, as in all the British captured specimens, have the margins of the wings white, and not yellow as in continental ones I took upwards of thirty years ago.

When I came into Morayshire in 1867, a youth described to me a butterfly he had seen so minutely, that I was sure it could be no other than *Antiopa;* but, not having seen the insect myself, I did not deem the circumstance worth recording:— now, however, I have little doubt this species has occurred in Forres before.—Geo. Norman, Cluny Hill, Forres: *26th August*, 1872.

*Vanessa Antiopa at Southend, Essex.*—You may perhaps be glad to add Southend to the other localities where the 'Camberwell Beauty' has been seen this season. On Wednesday, the 28th August, I saw one flying very slowly near the eastern end of the cliffs. I was within 12 feet of it, and could not, therefore, be mistaken.— E. J. Higgins, 24, Bloomsbury Street: *5th September*, 1872.

*Vanessa Antiopa near Eltham.*—A friend, residing a few miles from here, has just given me a specimen of *Vanessa Antiopa*, which he captured in his garden on the 1st instant.—A. H. Jones, Eltham, Kent: *5th September*, 1872.

*Vanessa Antiopa at Twickenham and at Hull.*—My friend, Mr. E. Boscher, saw a specimen of *V. Antiopa* settle on the lawn in front of his house at Twickenham: it escaped before a net could be brought to bear upon it. Another specimen is recorded from Hull, in 'Land and Water' of Saturday, August 31st. From the numerous records of this insect in contemporary entomological publications, it would almost seem as though a swarm had crossed the channel, and was spreading over the country. The supposed criterion of an English specimen—the colour of the border —is, I am told, untrustworthy.—R. Meldola, Brentford: *3rd September*, 1872.

*Vanessa Antiopa at Cambridge.*—We caught two specimens on the banks of the Cam, six miles below Cambridge, on the 24th August. We saw two more, but could not capture them.—J. F. Scott, 37, Manor Park, Lee, S.E., and G. M. Reeves, St. John's College, Cambridge: *August 31st*, 1872.

*Vanessa Antiopa near Leeds.*—It may, perhaps, interest you to know that a fine specimen of *Vanessa Antiopa* was caught in the neighbourhood of this town a few days ago. It was brought me by an unentomological friend, who had knocked it down with his hat,—and it is now in my collection. It is, perhaps, rather *under* the full size, and the border of the wing is pure white, not yellow, as was the case with some specimens I saw in Switzerland, whilst on a tour in that country in June last. —Alfred L. Joy, Ridge House, Woodhouse Lane, Leeds: *31st August*, 1872.

*Vanessa Antiopa near Folkestone.*—On my return from Japan, I was much pleased yesterday to see *Vanessa Antiopa* on a tree affected by *Cossus*, and had five chances of getting it, as it did not fly far; but I failed, having no net.—G. Lewis, West Terrace, Folkestone: *3rd September*, 1872.

*Vanessa Antiopa in Hyde Park.*—On my way to town this morning, I saw *V. Antiopa* fluttering over the roadway, within a few yards of the end of Rotten Row, close to Hyde Park Corner; of course, I recognized it directly, and, at the second attempt, succeeded in securing it with my fingers. The specimen was rather worn. —*J. E. Bentley, 12,* Argyle Road, Kensington, W.: Sept. 7th, 1872.

*Vanessa Antiopa in Leicester.*—A fine specimen of this magnificent butterfly was flying about my brewery yard here to-day: it settled on a beer cask, but I failed to secure it.—FREDERICK BATES, 15, Northampton Square, Leicester: *3rd September,* 1872.

*Vanessa Antiopa at Tunbridge Wells.*—*V. Antiopa* has been captured by more than one juvenile entomologist about here, and I have been fortunate enough to secure two; a male and female in fine condition: the latter I received alive.—H. BURNEY, Rosemont, Tunbridge Wells: *September 7th,* 1872.

*Vanessa Antiopa in Surrey.*—On the excursion of the Holmsdale Natural History Club to Copthorne on the 24th ult., Mr. Gilbert took a fine specimen of *Vanessa Antiopa.* In the previous week, Mr. Gilbert captured another specimen at Box Hill, but, in consequence of his net having been caught in a bramble, the insect escaped.—SYDNEY WEBB, Red Hill: *2nd September,* 1872.

*Vanessa Antiopa in Middlesex.*—On Saturday last (7th inst.), Mrs. E. W. Janson, who is well acquainted with this insect, observed a specimen of it hovering for some time over a sallow bush, as if for the purpose of ovipositing, in Highgate Wood. A niece of Mrs. Janson's has also recently seen at least two specimens, near Totteridge.—E. C. RYE, 10, Lower Park Fields, Putney, S.W.: *Sept. 13th,* 1872.

*Vanessa Antiopa near York.*—A very fine specimen was seen near here by my daughter, Mary Cornelia Morris, on August 22nd.—F. O. MORRIS, Nunburnholme Rectory, Hayton, York: *September 14th,* 1872.

*Vanessa Antiopa at Ramsey, Hunts.*—I have just heard from C. R. Bingham, Esq., of Ramsey Vicarage, Hunts., that he captured an *Antiopa* in his garden on the 3rd of September.—ID.

*Vanessa Antiopa at Chatteris.*—Mr. Alfred Fryer, of Chatteris, took a beautiful female in his garden on the 25th of August, and whilst he was killing it, his little son, Dan, caught another, a male, not quite in such good condition, but still a beauty.

The female specimen is really so fine, with the fringes perfect, and the wings so beautifully glossed, like "shot silk," that I should certainly say it was bred in this locality. I do not believe in the "flying-over" theory.

Both were taken at sugar on a pear tree.—W. FARREN, Howe House, Huntingdon Road, Cambridge: *September 16th,* 1872.

*Vanessa Antiopa in the West Riding.*—I have to record the occurrence of six specimens of *Vanessa Antiopa* in this part of Yorkshire. Three at Barnsley have been secured by Mr. James Jackson, two of which I have had the pleasure of adding to my own collection; one at Spa Mill, near Huddersfield, now in the collection of Mr. T. L. Moseley, of this town; one at Moor Bottom, Cleckheaton, in the possession of Mr. John Firth; and one at Bretton West has fallen to the lot of Mr. Jackson.

These were all taken during August or beginning of September in the present year; and, with the exception of the third Barnsley example, I have seen all the specimens.—GEO. T. PORRITT, Huddersfield: September 16th, 1872.

*Vanessa Antiopa at Darlington, &c.*—On the 14th inst., I had the great satisfaction of securing a magnificent specimen of *V. Antiopa.* There having been daily reports of its having been seen, I have looked closely after it, and received my reward. After all, when I had it in the net, I was sorry to have to pin the lovely creature. I took another example, but not quite so fine, on the following day.

A very fine one was taken at Saltburn the week before by a gentleman of this town; also, a worn one here a fortnight ago.—John Sang, Darlington: *September 16th,* 1872.

*Vanessa Antiopa, Pieris Daplidice, and Argynnis Lathonia near Folkestone.*—A very fine specimen of *Pieris Daplidice* was caught on the Warren here on August 18th, and is now in my possession. I believe other specimens have been taken. *Vanessa Antiopa* was taken in the same locality on the 25th: I saw it while still alive. *Argynnis Lathonia* was captured in one of its old haunts (a clover field) near Dover Castle, by Master Marcus Yunge, of Folkestone.—Henry Ullyett, Folkestone: *September,* 1872.

*Vanessa Antiopa, Argynnis Lathonia, and Pieris Daplidice at Dover.*—It may interest some of your readers to know that the neighbourhood of Dover has come in for a good share of rarities this season: there have been no less than nine *Argynnis Lathonia,* four *Pieris Daplidice,* and two *Vanessa Antiopa* taken in and near Dover by different persons. One specimen of *Antiopa* was seen in the centre of the town, but not captured; another was seen near Folkestone last week.—George Gray, 71, Castle Street, Dover: *26th August,* 1872.

*Argynnis Lathonia near Ramsgate.*—It may interest your readers to know that this season I have taken no less than five *Argynnis Lathonia* at a little distance from Ramsgate. I took one on the 30th ult., two more on the 3rd inst., and two more on the 6th inst. They were all taken within 100 yards of the same spot, and were, with the exception of one, very good specimens.—Arthur H. Snowden, Grantsfield, Leominster: *August 24th,* 1872.

*Zygæna meliloti.*—At the meeting of the South London Entomological Society, held on Wednesday, August 7th, two specimens of this new *Zygæna* were exhibited by Mr. Boden, of 127, Tooley Street. They were taken (with other specimens) in the New Forest, during the present summer. Last year, when searching for *A. caliginosa* in its particular locality, Stubby Coppice, I captured two specimens which I took to be small *trifolii;* but, upon examination, they prove to be *meliloti.* I also found a cocoon of that species on the grass. The date of my captures is June 29th, 1871.—J. P. Barrett, Hon. Sec., South London Entomological Society: *August,* 1872.

*Acronycta alni, &c., at Lyndhurst.*—It may be interesting to some of the readers of the Ent. Mo. Magazine to know, that I took a full-fed larva of *Acronycta alni* on a fence at Lyndhurst, on the 29th July last. The day before, I beat two larvæ of *S. fagi;* one off sallow, the other off oak.—J. Edw. Wilbey, 49, Downshire Hill, Hampstead, N.W.: *17th August,* 1872.

*Note on Crinodes Sommeri and Tarsolepis remicauda.*—In the last Numbers of the *Ent. Mo. Mag.,* and Ann. Mag. Nat. Hist., I find a note by C. Ritsema, of

Leyden, accusing me of re-naming an old and well-known species of moth, *Crino Sommeri*, Hübner, under the new generic and specific names of *Tarsolepis remicauda.*

*C. Sommeri* is figured by Hübner in the second volume of his 'Sammlung,' at pl. 197; on pl. 196 is another species, *C. Beschei*, both sexes of which are correctly figured, and *this species* must certainly be considered the type of the genus *Crino*, subsequently altered to *Crinodes.*

Hübner states his figure to be a representation of a male insect, which its possession of a well-developed anal tuft of radiating scales goes a long way to prove. My insect is also a male, and differs from the insect figured by Hübner in the following important characters,—some of them generic, others merely specific.

*Generic differences.*—1. Antennæ of ♂ bearing about 43 well-developed pectinations. (In *C. Sommeri*, as figured by Hübner, and as exhibited by all the species of *Crino* in the British Museum, the antennæ of the ♂ are very feebly pectinated).

2. Two long tufts of carmine hairs springing from the base of the abdomen beneath the wings. (No such character occurs in *Crino*).

3. Palpi short and robust, scarcely projecting beyond the head. (In *C. Sommeri*, as represented by Hübner, the palpi are long, slender, and project considerably in front of the head).

4. Body robust, almost clumsy. (In *C. Sommeri*, the body appears to be comparatively slender, the abdomen, moreover, appears to bear spinous processes, as in *Checupa fortissima*, a Hadenid, figured by Moore, P. Z. S., 8, pl. vi, fig. 5, 1867).

*Specific differences.*—1. Costal border of front wings continuous from base to apex. (In *C. Sommeri*, it is restricted to the centre of costa).

2. Basal pale patches well-defined. (In *C. Sommeri*, they seem to be merely represented by the usual elongation of the basal scales).

3. Inner margin of front wings slightly convex. (In *C. Sommeri*, it appears to be undulated as in *C. fulgurifera*, a species evidently allied to it).

4. Hind-wings comparatively (to *C. Sommeri*) long and oval, with ill-defined central spot, and the central marginal line converted into spots; none of the marginal lines continuous.

5. Under-side of wings considerably paler than in *C. Sommeri*, the markings less defined.

6. Transverse band of front wings scarcely waved, and nearly parallel to the outer margin. (In *C. Sommeri*, this band is strongly angulated, so as almost to touch the discoidal cell).

7. Fringe of all the wings very short.

The conclusion at which I arrive from the above comparison is this :—inasmuch as all the members of the genus *Crinodes*, so far as we know them, are from the New World; as the males of the typical species, and of other species more nearly resembling the Javanese moth, are destitute of the abdominal tuft, and of the strongly pectinated antennæ; I consider myself fully justified in retaining the generic and specific names, *Tarsolepis remicauda*, for the moth so designated, and I should recommend that that name be attached to the other Javanese specimens known to Mr. Ritsema in place of the name *Crinodes Sommeri*, the type of which, in my *opinion, will prove to* be an American insect.—A. G. Butler, British Museum: *September, 1872.*

*Rare insects from the Isle of Man.*—In reply to Mr. Birchall's enquiries about the insects I saw in Mr. Gregson's collection, I may venture to suggest that the latter gentleman is the one to whom application should be made as to the localities of the species mentioned by me; but possibly, as the Island is rather small, he might hesitate to furnish the information desired. Mr. Gregson has already furnished the history of *Agrotis spinifera;* and I may add that Mr. Gregson sent this species and *L. exigua* to Mr. Doubleday just as pinned, and unset,—in fact, both were sent alive, and I have known this for years. *Micra parva* he took flying in the hot sunshine, if I remember rightly; however, I had all the particulars about each species from his own lips, and he had nothing whatever to do in deputing me to make known what treasures he possessed.

I wrote the article referred to on my return home, and, before sending it for publication, I sent it to Mr. Gregson to ask if he had any objections to my forwarding it, and also to correct me if I was wrong in any of the remarks. I did not keep a copy of my original paper, but I think the Editors will bear me out that I said all the specimens were taken by Mr. Gregson himself, except *Crambus alpinellus* and the new *Clostera.* In fact, the article was not inserted till I wrote to one of the Editors that I had Mr. Gregson's permission; and then, even when published, the communication was not *exactly* as I had written it, and my notice of Mr. Gregson having collected the larvæ of *Chærocampa Celerio* was omitted.—J. B. HODGKINSON, 15, Spring Bank, Preston: *August* 12*th*, 1872.

*Depressaria Douglasella near Blackpool.*—Early in June, about six miles from Blackpool, I met with the larva of *D. Douglasella,* and bred a dozen white-faced and white-headed specimens. A later journey to the same locality furnished me with two species I had never bred before, namely, *D. purpurea,* and (to-day) a fine *D. Yeatiana.*—ID.

*Larva of Depressaria Yeatiana.*—Hearing that Mr. Hodgkinson had bred this insect, I wrote to enquire on what plant he had found the larva. He says he found it on wild carrot, and that it was of a yellowish-green, not unlike the larva of *D. ciliella.* He assures me that there is no mistake about the food-plant, as he kept the larva on each plant separately.

He says the imago of *D. Yeatiana* is abundant on the Lytham sand-hills, at the roots of "the bent or star grass" as it is called.—H. T. STAINTON, Mountsfield, Lewisham: *August* 31*st*, 1872.

*On the habits of the larva of Eupithecia togata.*—On 5th July, 1871, I received from Mr. A. H. Jones, five eggs of this species, which had been given him by a friend who had taken the moth in Scotland. The larvæ hatched on the 9th, and, as I understood the moths were beaten from the spruce fir, I supplied them with twigs of spruce, as well as some knot-grass, and a few flowers, such as those of ragwort and golden rod. Two or three of the larvæ nibbled a little at the flowers and knot-grass, but soon dwindled and died. The other two attacked the spruce, *burrowing into the buds* which studded the ends and sides of the young shoots, but, unfortunately, in my attempt to watch their proceedings, I injured them so that they *both died.* However, early in July of the present year, Dr. F. Buchanan White, by dint of hard work, obtained some eggs, some of which he kindly sent to Mr. Buckler, from whom they passed into my hands. Eight eggs reached me safely, and the larvæ hatched on July 18th; being now sure of the proper food, I gave them no choice, putting in only bits cut off from spruce shoots, which were furnished with buds. As before, three of the larvæ failed to find out their food in time, and were starved; the other five fed away at once, but, instead of attacking the buds, commenced operations by *tunnelling into the inner bark or liber at the cut ends of the shoots;* they never touched the outer bark or the needle-like leaves, but ate their way onwards,—in some cases for an inch or more, through the liber, until they reached a bud, into which they then burrowed. They ate rapidly, and their frass accumulated in proportion, some of it being extruded at the mouth of their tunnels, but they gave no other sign of their presence. How they would act in nature, I cannot say—whether they would ever open an outward passage, and so travel from bud to bud, or whether they would remain quite hidden after their first entrance; but I am sure each individual eats enough to destroy all the buds on a long, young shoot by the time it becomes full-grown. I left my larvæ undisturbed for some time, but about the 6th of August I saw one of them come out of its tunnel, and walk restlessly about; I then carefully examined all the other tunnels, but could find only one other larva, and that apparently dead. I now put in a fresh supply of spruce, placing both the living and the dead larva on it, and, when I next looked, I found the former busily engaged in finishing up the remains of its defunct relative; I concluded, therefore, it had also been the cause of the disappearance of the others, owing, perhaps, to its being deprived of tender food by the drying up of the juice of the spruce buds. After this, it fed away steadily on spruce, and moulted thrice, and on the 19th of August I sent it to my friend, Mr. Crewe; from him it was sent to Mr. Buckler, and fed away until 25th August, when it began to hide itself in some peaty soil, with which it had been supplied; on the 26th it disappeared totally, and by this time is, I hope, in pupa. It was supplied with bits of spruce shoots and bark, but it seemed to take naturally to the soil for pupation, so that it is probable in nature it would eat its way out, and drop or crawl to the ground, and the pupæ should be looked for at the foot of the trees.

The egg is very broadly ovate, much wider, although but little longer, than that of *castigata;* straw-coloured at first, afterwards becoming bright vermilion. The young larva when first hatched is something of the colour of the bark of a spruce shoot, being pale olive-brown; the head, plate on second segment, and anal tip being hard shining black; under a lens all the warts come out distinctly—black and shining, and furnished with hairs. After a moult or two, the colouring becomes much as it continues up to full growth, and the whole appearance of the larva—both in figure and tint—makes one see at once that it is an internal feeder, and at the same time very little like the larva of any other *Eupithecia* on our native list. —J. Hellins, Exeter: 31*st August*, 1872.

*Description of the larva of Eupithecia togata.*—General colour dull pinkish-brown. Central, dorsal, sub-dorsal and spiracular lines whitish, indistinct, especially the two latter. Skin wrinkled; body sparsely studded with black tubercles and short hairs. Head and collar horny and glossy, dusky brown.

*An odd,* internal looking-animal, strongly resembling a miniature *Cossus ligniperda.*

Feeds inside the buds and young shoots of spruce fir. Hatched July 18th. Full-fed the last week in August.

I am indebted to the kindness of Mr. Hellins, of Exeter, for the opportunity of seeing and describing this hitherto, I believe, undescribed larva. Mr. H. reared it from the egg.

Mr. Buckler has succeeded in taking its portrait.—H. Harpur-Crewe, The Rectory, Drayton-Beauchamp, Tring: *September 2nd*, 1872.

*Natural History of Acidalia degeneraria.*—On the 8th of August, 1871, I had the pleasure of receiving from Mr. George Harding, of Bristol, the welcome gift of eight young larvæ of this species, hatched on the 29th July from eggs laid loose in a box, on the 18th, by a much worn, captured female.

Mr. Harding also informed me that the eggs were pink in colour, and became darker and more dingy just before hatching, and that the newly-hatched larvæ differed in no respect but that of size from their appearance when consigned to me, having fed from the first on *Polygonum aviculare.* At this time, being ten days old, they were about three lines long, slender, and of a greenish-brown colour, and, when at rest, were generally in a looped position, but were remarkably timid, tucking their heads under and curling up into a close coil at the least alarm, and persistently remaining in this posture for a long time; their voluntary movements were very slow and measured.

By the middle of September they had changed their colouring to a rich cinnamon-brown above, and blackish beneath; on a close scrutiny for details at this time, they presented exactly the same design as hereafter described in the adult state; they now began to be lethargic, and to show symptoms of hibernating, but, as the *Polygonum* was still procurable, I often disturbed them with fresh food to incite them to eat, in the hope of getting one or two to feed up before winter; this at one time seemed probable, though with a change of colder weather they baffled my design by ceasing to feed and insisting on sleep.

In this state, and reduced to six in number, on October the 29th, they were transferred to a pot with growing plants of Dandelion, *Veronica polita*, and *Plantago lanceolata*, covered with coarse muslin and kept in a window seat facing west, in a room without fire; by this date, they had grown to eight lines in length, and were rather darker than before.

By the middle of February, 1872, I observed the plants in a dying condition, and a few indications of mould generating amongst the withered leaves, which, however, had not attacked the larvæ, resting as they were on the sides of the pot. I now took them out, and placed them in a new abode; and, the weather soon after being severe, I put them in another room with a fire, in order to try them with bramble, and soon had the pleasure of seeing them nibble at it, and also at *Cerastium* and *Veronica*, though the bramble seemed to be preferred: satisfied with this experiment, I then restored them to their former colder quarters, where they did very well, feeding a little from time to time, whenever the severity of the weather relaxed a little, and, by March 7th, two of them had quite outstripped their companions in growth, and by the 13th had attained apparently their full size, still, however, feeding a little until April, on the 15th of which month they assumed the pupa state; another followed their example on the 26th, one on May 8th, one more on the 26th, the last on June 30th: the four earliest appeared in the imago state from *June 14th to 24th*, and a fifth moth appeared on the 14th of July.

When about to change, the larva drew around it with a few fine threads a leaf of bramble or *Veronica*, or any withered bit of leaf or moss it found on the surface of the soil, and changed therein.

After hibernation, they seemed to have lost the power of curling up when disturbed, but now seemed to feign death by extreme rigidity, allowing themselves to be turned over and rolled about without betraying life by any movement; their natural posture, too, in repose on their food plants was straight and stick-like.

I could not help noticing how closely, both in form and general appearance, these larvæ of *degeneraria* came to those of *inornata*.

When full-grown, the larva of *degeneraria* is seven-eighths of an inch in length, broadest at the ninth segment, and from thence tapering gradually to the head (the smallest segment), the posterior segments taper but little to the rounded anal tip; the body is convex both above and below, and has a projecting rounded ridge along the sides, so that it appears somewhat flattened; the segmental divisions are well defined by the end of each segment projecting at the side, in breadth, beyond the beginning of the next; the skin is rugose, with about twelve sub-dividing wrinkles in each segment; the head indented on the crown.

In colour, the head is chiefly blackish-brown, conspicuously marked on the crown of each lobe with pale cinnamon or bright rust colour, which extends as a stripe down its outer side; a patch of the same colour is on the dorsal surface of the three following segments, being rounded at the sides on the second segment, triangular, and pointing backwards on the third and fourth; with these exceptions, the rest of the back, as far as the end of the eighth segment, is deeply suffused with dark brown, the remainder being again of bright rust colour, strongly contrasting with the darker hue of the middle segments; on the back of each segment, from the fifth to the ninth inclusive, are double darker brown markings, somewhat like Vs, pointing backwards, and standing one a little in front of the other at the hinder part of the segment, their limbs are curved outward soon after their commencement, and by degrees finely attenuated as they reach the next segment in front, each arm of a V being thus like a miniature willow leaf; in front of these, and embraced by their arms, is rather an elliptic shape of similar dark brown, and then a black square mark, close to the segmental division; both of these shapes are distinctly divided in halves by the thin pale greyish-ochreous dorsal line, which then vanishes, but re-appears as a pale spot or two within the base of the hinder V mark: the subdorsal line is of the same pale colour, and also appears only for a little just at each end of a segment, where it intersects a dark brown streak at the side of the back, slanting in a course parallel to the limbs of the Vs; on the hinder rust-coloured segments the markings are more tender, and on the last three are but imperfect diamond shapes of brown, the tubercular blackish dots being visible on them; a faint thin line of ashy-grey separates the colouring of the back from the blackish belly, which has on each segment three ashy-grey marks, together in form resembling a lyre, and two dots of the same grey colour at each end; the spiracles are black, and the tubercular warts and their short bristles are very minute, and rather numerous at each end of the body.

The only variations that occurred were, that one individual from first to last *continued to be rust coloured,* and that another became after hibernation wholly *suffused with dark brown.*

The pupa is three-eighths of an inch in length, plump, and tapering rapidly near to the anal tip, which ends in a blunt curved spike proceeding from a little flattened knob; its colour is chestnut brown.—William Buckler, Emsworth: *August*, 1872.

*Capture of a Scymnus new to the British list.*—I was fortunate enough to meet with a *Scymnus* new to the British list, on the 24th of last month, while staying at my brother's house in Leicestershire (Shenton Hall, near Market Bosworth),—namely, the *S. arcuatus* of Rossi. I brushed it (along with *Atomaria peltata*, and a few other rather scarce species) from out of a mass of very old ivy, which clothed a wall, and it was so active with its wings that it well nigh eluded my grasp; but, although I visited the spot every day during the remainder of our sojourn, I could not secure a second example. It being an insect with which I am very familiar in the Atlantic islands (often abounding at Madeira), and one which I had always regarded as somewhat southern in its range, I confess that I was a little surprised to stumble upon it so far to the north as in Leicestershire; but I imagine that it is distributed, more or less, throughout central Europe likewise. I should have been less taken aback, however, had it been in the Isle of Wight, or elsewhere along the southern coast, in which it had made its appearance.—T. V. Wollaston, Teignmouth: *September* 10*th*, 1872.

*Calosoma sycophanta at Plymouth.*—A fine specimen of *Calosoma sycophanta* was taken by a friend of mine, Dr. Harper, last week. He saw it flying in Exeter Street, Plymouth, and, on its alighting on a wall, he caught it in his hand (receiving a nip from the insect), and carried it home in his glove.

I have heard of no instance of the capture of *sycophanta* in Devonshire since Mr. Reading took, far inland, the mutilated specimen, now in my collection; just ten years since, July, 1862.—J. Brooking Rowe, 16, Lockyer Street, Plymouth: 31*st August*, 1872.

*Note on further British examples of Baridius scolopaceus, Germ.*—I have great pleasure in being able to record, that I have at last discovered the head quarters of *Baridius scolopaceus* in the Isle of Sheppy. Early in August last, I obtained it somewhat freely, by continually sweeping a small piece of salt marsh, close to the shore (and fully three miles from the original locality), the plants therein consisting of *Atriplex portulacoides*, *Suæda maritima*, *Salicornia herbacea*, and *Artemisia maritima*. I am inclined to think the *Atriplex* is probably its food-plant here, as most of my specimens were obtained when sweeping that alone. *Aster tripolium* and *Arenaria maritima* (but no *Glaux*) grow sparingly in the locality; but I do not think the insect has any connection with these plants. It may be as well to note, that *Chenopodium maritimum*, the plant on which the *Baridius* was taken abundantly in France, last year, though closely allied to *Atriplex*, is not a native of Britain. *B. scolopaceus* seemed to prefer the hot sunshine, the sun probably bringing it up from the wet marsh beneath, as it was much harder to obtain in dull weather. I also noticed that it readily flew about, and copulated freely. I have spent a long time searching the roots of the plants in the locality, in hopes of thus determining, for certain, its food plant; but not a single specimen could I obtain in this way; *the wet ground* beneath, or higher up where drier, the quantity of tidal refuse, looking, certainly, anything but likely for it. I am sorry the specimens obtained are apparently all abraded, being nothing near so densely scaled as my original specimen, from which the species was figured in the last 'Annual' (there being scarcely any signs of the ochreous scales). It also runs much smaller in size than I expected, averaging about that of *Mecinus circulatus*.

I expect I was too late to get it in its best condition. June (the time of capture of the original specimen) is probably the time to get it fresh; and it doubtless soon gets abraded.—G. C. Champion, 274, Walworth Road, London, S.: *Sept. 4th*, 1872.

*Captures of Coleoptera in Kent, &c.*—The following notes on some rare *Coleoptera* are partly supplemental to the last list published by me in this Magazine, and partly the result of investigation in other localities subsequently visited.

That the actual soil of a locality is not of great importance, if its situation be good, the fact that I have reaped a good harvest from the margins of a little sallow pit near my house here may show; for, though the clay is of the stiffest wealden, yet the insects of the green sand of the north side, and of the Forest of St. Leonard's on the south, find here, I conceive, a "half-way house" within reach. Thus, among the first that greeted me here were *Bembidium quadripustulatum* and *Sturmii* (but two of the first, however, and one of the second). *B. obliquum*, found on the Forest, round gravelly pools, has not penetrated as yet to Rusper. *Anchomenus versutus* seemed also a visitor;—*Anch. gracilis*, *Conurus immaculatus*, *Donacia bidens*, and *Stenus exiguus* are among the more distinguished of the company, while *Stenus morio* (hitherto almost unique as British) seems to have effected a settlement, as I have secured a moderate series from the above-named pit. Of this species, Mr. Janson (its original recorder as British) had two, there is one in Dr. Power's collection, and one in my own: Mr. Rye also tells me he has long had a specimen identical with Mr. Janson's. These, however, are all the specimens I am aware of.

Early in the year, St. Leonard's Forest itself produced a few good things: viz., *Epuræa parvula*, under *birch* bark, *Agathidium seminulum*, *Phlœocharis*, *Bitoma*, in abundance, *Homalium planum*, *Leptura nigra* and *Stenus contractus*, in their respective habitats.

A stay last summer at Eastry, near Sandwich, gave me an opportunity of capturing many of the Deal sand-hill insects, of which I will only particularize the more interesting, as the insects of that place have been so often recorded. Here I may correct an error which has crept into the record of *Omias pellucidus*, in the Ent. Annual, 1872, p. 45. The locality should be at Eastry. When I first found it, it was in great numbers crawling in the sandy gravel by the side of the road. The dead bodies of hundreds, and thoracic and femoral development of the males, testifying to the severity of the struggle for existence.

Of the very rare *Athöus difformis*, I here got three males and one female, and also *Saprinus virescens*, vainly mimicing *Phædon cochleariæ*, the larvæ of which it feeds on, upon beds of water-cress, over which *Stenus major* not rarely ran. Sweeping produced two of a *Ceuthorhynchideus*, easily distinguished by its thorax contracted very much in front, its cinereous elytra, and reddish tarsi; this Mr. Rye tells me is the species known here as *hepaticus*, Gyll. *Telmatophilus sparganii* and *brevicollis*, *Telephorus figuratus*, *Sunius intermedius* and *Pæderus littoralis* may conclude the list, though by no means exhausting the good things taken here.

I must now bring my notes to an end with a few odd mems. from my diary.

From Bearsted, I have *Stenus palustris*, and from Enfield, *Cryptarcha imperialis*, *Phlœophilus* and *Ptinus subpilosus*. At Southend, *Myrmedonia Haworthi* gladdened my eyes; but of *two* taken, one, alas! alone reached home, the other being entombed in glass somewhere near Prittlewell Church (where I lost my bottle).—H. S. GORHAM, Rusper, Horsham: *August 14th*, 1872.

*Strange habitat of Licinus silphoides.*—This Box-Hill species is now in great profusion on the beach near Hythe.—G. LEWIS, West Terrace, Folkestone: *3rd September*, 1872.

*Saltatory power of Rhinoncus subfasciatus.*—When sweeping by the side of a ditch at Bognor, where *Rhinoncus subfasciatus* was tolerably abundant, I was not a little surprised to see an individual of that species *jump*. At first I naturally thought it must be some mistake on my part; but, on sweeping again, catching more, and lifting up the bottom of the net carefully, I found I was not deceived, as several specimens jumped, and many times when collecting where this species was abundant, I witnessed this curious fact.

The leap is but a short one, varying from about half an inch to one and a-half inches, and appeared to be effected by a sudden retraction of all the legs.

Any person who has seen this insect alive, and noticed its quick and sudden movements, will not be surprised that the sudden *shutting up* of its legs should throw the insect up into the air; at any rate, this seemed to me the way in which the leap was effected, the feat being, possibly, performed more by accident than design.—EDWARD A. WATERHOUSE, British Museum, W.C.: *September 6th*, 1872.

*Unusual abundance of Niptus hololeucus.*—This insect so abounds in the house of my Vicar, the Rev. J. W. Sheringham, of Standish, Gloucester, as to be a perfect nuisance. The family thought it to be a spider, and accuse it of eating flannel, cloth, &c. They tell me they have swept it from the floors *in hundreds*, and cannot get rid of it, though they have somewhat thinned its numbers by the use of carbolic acid soap. Although one of the *Ptinidæ*, its build evidently shews it to be no wood-borer; still, occurring in such profusion, it may really be of harm to such material as that above mentioned. It seems to follow man, never occurring, so far as I know, in open country.—ALEX. NASH, The Glebe House, Hardwicke, Gloucester: *September*, 1872.

*Captures at Weybridge.*—On the occasion of the excursion of the Entomological Club on the 29th June last, among many other insects not deserving special notice, I captured *Ceuthorhynchideus pumilio* on *Teesdalia nudicaulis*; *Sybines potentillæ* under *Spergula arvensis*; *Dictyonota Fieberi*, larvæ on broom bushes: all found under the guidance of Dr. Power to their exact localities. *Cardiostethus testaceus*, by sweeping long grass; *Butalis cicadella*, one, from a furze bush.—J. W. DOUGLAS, Lee: *5th August*, 1872.

*Note on Agrothereutes Hopei, Gr.*—Every observation tending towards the discovery of the dissimilar sexes of the smaller Cryptidæ deserves careful attention, as only accidents, few and far between, can ever elucidate a difficulty of this description. One of these accidents occurred to-day. I took, in very close juxtaposition, *Cryptus pygoleucus*, Gr. (♂ only known) and *Agrothereutes Hopei*, Gr. (♀ only known). Both are not uncommon here. That they are the opposite sexes of the same species I am strongly inclined to believe, though absolute demonstration is impossible. They resemble each other, and also differ, exactly in those points which are noticeable in the sexes of other species. The ♂ is, as usual, darker, and has the thorax black. The ♀, with imperfect wings, has the red thorax so often associated with that feebleness of structure. The hind legs (with the femora tipped with black, and a white ring at the base of the tibiæ) are the same in both, and this character, which is independent of sexual differences, appears to have much weight, taken in conjunction with the fact of the insects being in company, and having apparently some attraction for each other.—T. A. MARSHALL, St. Albans: *August 29th*, 1872.

*Formica fusca: two ♂ in copulâ with one ♀.*—This morning, at 8.50, during bright sunshine, what I at first took simply to be a united couple of this ant, crossed my road on the wing. But, as it struck me that there was something wrong, owing to the drooping flight of the ♀, which seemed to be more than usually burdened, I caught the travellers, when it appeared that the ♀ was in simultaneous copulation with two ♂ aside of each other. I let the happy trio run over my hand, or, rather, allowed the ♀ to drag her mates along with her, when, toppling over, she fell to the ground, where she immediately parted with her wings, but continued to drag her helpless winged partners along with her, right across a broad stony road. The ♂ ♂ seemed utterly exhausted; and made no attempt to use either wings or legs; nor did they fold the former or draw up the latter, but in the position in which they dropped they were dragged away. The rest of my proceedings I shall keep to myself; suffice it to state, that *gentle* pulling was not enough to sever the triple alliance.—ALBERT MÜLLER, South Norwood, S.E.: *August 18th*, 1872.

*Proposed revision of the Trichopterous family Hydroptilidæ.*—I am engaged upon a revision of the *Hydroptilidæ*, and solicit the loan of specimens from all parts of the world, so that I may gather information respecting the geographical distribution of the genera and species. In return for the privilege of inspecting them, I will undertake the arrangement of collections sent to me, and defray half the expense of transmission. Even a few specimens in good condition would be gladly received. Boxes by post should be sent to my address as under; those by rail may be addressed to me, at the Entomological Society, 12, Bedford Row, London. Up to the present time, I have determined *nine* British species, and *five* genera, in the place of the *four* species and *two* genera hitherto recognised. Some of these occur also on the continent, where a sixth genus is represented. Specimens from the Rhine, Sweden, and Canada, would be especially welcome on the chance of their comprising examples of some described forms of which I have seen few or no representatives. As a rule, I would prefer to leave new species un-named, unless they be represented by series of specimens in good condition, from which trustworthy figures of the anal appendages could be obtained. Colour characters are at a discount in most of the species of this family.—A. E. EATON, Pottesgrove Rectory, Woburn: September, 1872.

# DESCRIPTION OF A NEW GENUS AND TWO NEW EXOTIC SPECIES OF THE FAMILY *LARRIDÆ (HYMENOPTERA).*

BY C. RITSEMA.

## PIAGETIA, *g. n.*

Head transverse, a little wider than the thorax, truncated and excavated behind; face a little prominent; eyes large, oval, their inner orbit straight; only one well developed ocellus; antennæ filiform, inserted at the base of the clypeus at a little distance from each other, the scape fully as long as the two first joints of the flagellum; mandibles notched exteriorly near the base, not (?) toothed within. Prothorax narrower than the mesothorax, produced into a neck, which is received into the excavation of the head, posterior margin bowed backwards in the middle; metathorax elongate, of about equal length to the mesothorax, truncated posteriorly, the sides a little wider at the base. Intermediate tibiæ with a single spine at the apex; posterior femora with a stout, curved tooth (♂) or with a little tubercle (♀) at the base, flattened if not excavated beneath. Anterior wings with one marginal cell truncated and appendiculated at its apex, and three submarginal cells, the first longer than the two following, the second, which receives both recurrent nervures before its centre, narrowed towards the marginal cell, the third lunate. Abdomen a little shorter than the thorax, heart-shaped, petiolate; the first segment conical, and at the under-side (especially in the male) with a scale-shaped transverse appendix; the second segment the largest.

The genus here described agrees with *Larrada* and *Larraxena*, Smith, principally in having only one well developed ocellus (the posterior pair being obsolete), and in the elongated and truncated metathorax; but it differs from them in having the first submarginal cell longer than the two following united, a character in which it agrees with *Morphota*, Smith; the latter, however, has the second submarginal cell triangular, and three distinct ocelli. The neck-shaped prothorax, the petiolated heart-shaped abdomen, and the armed hind femora, remove it from all the hitherto described genera of this family with three submarginal cells. The genus *Aulacophilus*, Smith, which has only two submarginal cells, has also a petiolated heart-shaped abdomen, but the petiole is longer than in *Piagetia*.

### P. WOERDENI, *sp. n.*

♂. Length 8 mm. Head black, antennæ, clypeus, cheeks, and mandibles ferruginous, the latter black at the tips; clypeus, cheeks, base of mandibles, and of the *exterior orbit of the eyes*, thinly covered with short silvery pubescence, and the face with grey, the latter having three longitudinal grooves, one between the antennæ, and extending from the base of the clypeus to the ocellus, the two others, broader and much shorter, on each side of the first; clypeus with a longitudinal central carina, the anterior margin produced and deeply curved in the middle, the angles a little acute. Thorax ferruginous, the posterior margin of scutellum, the post-scutellum, the mesothorax beneath, and the metathorax (except the sides and two large triangular spots with their tops uniting between the disc and the truncation), black; the metathorax finely shagreened above, with a longitudinal central line, the truncation smooth and shining, with a longitudinal oval groove in the centre. Wings hyaline, with a beautiful whitish-blue iridescence in certain lights, and with a fuscous cloud at the apex, beginning with the marginal cell, the second submarginal cell, &c.; the tegulæ and the costal nervure before the black stigma pale ferruginous, the other nervures dark fuscous. Legs ferruginous, except the upper-side of the intermediate and posterior coxæ and trochanters, and of the base of the intermediate femora and metatarsi, which is black; the inner-side of the posterior femora, the upper side of the posterior tibiæ, the posterior metatarsi, and the apical spines of the intermediate and posterior tibiæ, are also black. Abdomen black and shining, the apical segment dark fuscous; the posterior margin of the segments very thinly covered with short grey pubescence.

Sent from Congo (South West Africa) by the late Mr. M. G. van Woerden (in Dr. E. Piaget's collection).

### P. RITSEMÆ, *sp. n.*

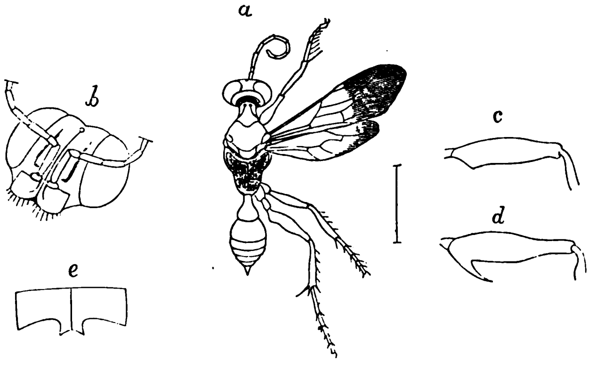

fig. *a.*—*Piagetia Ritsemæ*, mihi, ♀.
„ *b.*—Head of ditto „ ♀.
„ *c.*—Hind leg of ditto „ ♀.
„ *d.*—Hind leg of *P. Woerdeni*, mihi, ♂.
„ *e.*—Clypeus of ditto „ ♂.

♀. Length about 10 mm. Head and antennæ black, the anterior half of the clypeus, the scape of the antennæ in front, and the mandibles, pale ferruginous, the latter black at their tips; clypeus, scape in front, cheeks, base of mandibles and of the exterior orbit of the eyes, densely covered with silvery pubescence, and the face thinly with grey, the latter having three longitudinal grooves; one between the antennæ and extending from the base of the clypeus to the ocellus, the two others, broader and much shorter, on each side of the first; the clypeus with a longitudinal *central* carina, the anterior margin slightly curved in the middle, the angles rounded. *Thorax black, smooth, and* (except the scutellum) not shining; the mesothorax with *a little circular pale ferruginous* spot beneath the anterior wings, the under-side, and also the intermediate and posterior coxæ and trochanters, covered with silvery pubescence; the disc of the metathorax with a fine transverse striation, interrupted in the middle by a longitudinal line, which does not run to the verge of the truncation; the truncation densely covered with silvery pubescence, and with a longitudinal oval groove in its centre. Wings hyaline, with a beautiful whitish-blue iridescence in certain lights, and with an interrupted fuscous cloud at the apex, beginning with the marginal cell, the second submarginal cell, &c.; the tegulæ pale ferruginous, the stigma black, the nervures dark fuscous. Legs ferruginous, with the upper-side of the anterior and intermediate coxæ and trochanters, and of the apex of the posterior femora, the posterior coxæ and trochanters, and the apical apines of the intermediate and posterior tibiæ, black; and the posterior tibiæ and tarsi blackish. Abdomen black and shining, the posterior margin of all the segments and the base of the second very thinly covered with short grey pubescence; the posterior margin of the first segment, and also the apical segment, dark fuscous, the latter closely punctured, and terminated by a style which encloses the aculeus.

Sent from Soerabaya (East Java) by my brother, M. L. Ritsema (in the collection of the Royal Museum at Leyden).

Leyden: *September 25th*, 1872.

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## DESCRIPTION OF A NEW SPECIES OF *APHIDIUS* FROM BRITAIN.

BY THE REV. T. A. MARSHALL, M.A., F.L.S.

So few of the numerous species of this group have been described, that it is easy to detect a new form. The following has been compared with every extant description:—

### Aphidius gregarius, *sp. n.*

*Antennæ* ♀ 20-, ♂ *circiter* 25-*articulatæ. Caput transversum, thorace latius. Palpi maxillares* 4-, *labiales* 3-*articulatæ. Mesothorax sulculis ordinariis nullis. Metathorax non excavatus. Alarum cubitales tantum* 2, *quarum prima cum discoidali confusa. Segmentum primum abdominis medio constrictum, postpetiolo tumidiusculo, scabriculo. Terebra lata, haud incurva, perbreviter exserta. Luteus; antennis (articulo* 1° *excepto), capite, mesothoracis disco, et metathorace plus minus, nigris. Stigma et nervi cubitales (in vivo) viridia.* ♂ ♀ *Long. lin.* 1⅓.

The abdomen is a paler testaceous than the rest, and the hinder edges of the segments are tinged more or less with fuscous. The petiole is often black or brown. Terebra black. Nervures of the wings fuscous, except those forming the rudimentary cubital cells, and the stigma, which, when the insect is alive, are pale green. The areola is open behind, from which it results that there are only two cubital cells, and the first is not divided from the discoidal. The black colour on the mesothorax is indistinctly trilobate, the middle lobe or spot shorter than the other two, leaving a luteous space before the black scutellum. The hind coxæ at the base, the hind femora, and the hind tarsi, are more or less fuscescent.

This is a parasite of the *Aphis* of the poplar and willow, numbers of which were found assembled at the base of the shoots of trees at Kentish Town, by Dr. Knaggs, in the present month. *Aphidius salicis*, Hal., is found in the same situation, but is a different species; see Ent. Mag. ii, 102, and note. With *A. gregarius* were several specimens of another parasite. This is *Ceraphron* (*Lygocerus*) *Carpenteri*, Curtis. I had often seen this species, but never traced its origin, though Curtis says he bred it from 'female' *Aphides*. Of course it attacks only those *Aphides* which are already pierced by an *Aphidius*, having for its object the larvæ of the latter.

St. Albans: *September 26th*, 1872.

## NOTES ON BRITISH *TORTRICES*, WITH DESCRIPTIONS OF TWO NEW SPECIES.

BY C. G. BARRETT.

The publication of Drs. Staudinger and Wocke's Catalogue of the Lepidoptera of the European District in 1871 caused such a revolution in the existing nomenclature, that a good deal of confusion is likely to be caused in some groups by the indiscriminate use of two sets of names.

This is especially the case with the *Tortrices*, and as Mr. Wilkinson, in his 'British *Tortrices*,' made no attempt to go into their synonymy, I have thought that a few notes on changes of nomenclature, with notices of undescribed species, and observations made since the appearance of that work, may possess some interest, and perhaps conduce to a more thorough knowledge of our British species.

In preparing these notes, I have constantly received most valuable assistance from Mr. Stainton and Professor Zeller; while Messrs. Doubleday, McLachlan, Howard Vaughan, Machin, Birchall, and Sang, Rev. Henry Burney, Dr. Buchanan White, and other friends, have liberally entrusted me with their rarest and most interesting species for examination, and have given me much valuable information upon them.

As far as possible I purpose following the arrangement of Wilkinson's work, as it is more the basis upon which I must work than is Doubleday's list. I am prevented from adopting the new arrangement of Dr. Wocke by the difficulty I feel in adopting such a genus as his *Penthina*, which, commencing with our *Pædisca profundana*, includes our *Brachytænia*, *Penthina* proper, *Euchromia*, *Orthotænia*, *Mixodia*, *Roxana*, the larger species of *Sericoris*, and *Sideria*.

*Sarrothripa Revayana*, Schiff.—This species is removed by Dr. Staudinger and other German authors from the *Tortrices*. In Staudinger's Catalogue it stands at the head of the *Bombyces*, following immediately after the *Syntomidæ* (*Naclia ancilla* and its allies), and is followed by *Earias vernana*, *insulana*, and *chlorana*, and *Hylophila prasinana* and *bicolorana (quercana)*, forming, with two more genera, the family *Nyctæolidæ*. The name there adopted is *undulana*, Hüb.

*Amphysa Gerningiana*, Schiff.—Apparently a misprint in Wilkinson for *Gerningana*—the correct name. Professor Zeller says—"It "occurs where there is no *Vaccinium*, but always *Calluna*, so *that* may "be its principal food-plant."

*Amphysa prodromana*, Hüb.—Wocke quotes *Walkerana*, Curt., as only a synonym. Wilkinson gives no time of appearance, Stainton's Manual gives July, but Zeller says that he took it in April, and believes it flies generally early in the year. Probably there may be two broods. Hübner represents the larva on a species of willow. Stainton's Manual gives as the food-plant "Sallow?" but M. Jourdheuille, in the 'Calendrier du Micro-Lepidopteriste,' *Potentilla anserina*.

*Hypermecia augustana*, Wilk.—This is *cruciana*, Linn., as pointed out by Mr. Doubleday (Ent. Ann., 1870, p. 142). It is very variable in size and colour, but the basal patch on the fore-wing seems always to be dusky greyish. This colour frequently invades the other markings, and a specimen sent by Mr. Hodgkinson, and bred from dwarf sallow at Lytham, Lancashire, is very small, and has all the markings pale drab. Mr. Hodgkinson informs me that this is its usual character in that locality.

Large and brightly marked southern specimens frequently show faint traces of silvery lines bounding the fasciæ, as in the next species.

*Hypermecia augustana*, Hüb.—Recorded as British (Ent. Ann., 1870, p, 141). Taken at High Force, Durham, by Lord Walsingham. One specimen taken in Scotland by Dr. Buchanan White. As it is not described in any English work with which I am acquainted, I append a description taken from the original specimens kindly lent by both captors.

Alar. exp. 4—5 lines. Head and palpi pale ochreous. Antennæ grey. Thorax chestnut-brown, paler at the sides. Fore-wings narrow, pale ochreous, with the markings bright chestnut, well defined, and edged with delicate silvery lines. Basal patch distinct, rounded posteriorly. Central fascia narrow, rising at the middle of the costa and proceeding to the anal angle, where it is slightly attenuated. Apical blotch nearly round; below it a small spot on the apical margin. Cilia pale *ochreous*. *Hind-wings* dark greyish-brown.

Distinguished from *cruciana* by the chestnut-coloured basal patch, which is not produced so obliquely to the inner margin as in that species, the narrow fascia, the pale hind margin, and distinct apical spot, but especially by the narrowness of the wings towards the apex. Much like *Pamplusia monticolana (mercuriana)*, close to which both species are placed by Wocke in the genus *Steganoptycha.* As in that species, the silvery lines seem uncertain and evanescent. I suspect that this species has been overlooked. Mr. Stainton tells me that he has a specimen taken at Kilmun, and Mr. Dunsmore that he has taken it near Paisley.

*Eulia ministrana*, Linn.—Placed by Wocke in the genus *Lophoderus* with *Tortrix ochreana* and *Cnephasia politana* and *cinctana.* Zeller says the var. *ferrugana* seems to prefer the coast.

*Brachytænia semifasciana,* Haw.—Included by Wocke in *Penthina.*

*Brachytænia Hartmanniana*, Linn.—Changed by Wocke to *scriptana*, Hüb., but it is difficult to understand why, as Linné's name is long anterior (1761). He quotes *nubiferana*, Stephens as a variety. This also is hard to understand, as it is certainly a variety of *variegana* (*cynosbatella*).

*Antithesia corticana*, Hüb.—Wocke gives *picana* only as a synonym. It is certainly long posterior, and the existence of another *corticana* in another genus (*Pædisca*), although it would be a reason for not *giving* the same name to a new species, does not seem to me sufficient to warrant the *suppression* of a name already given.

*Antithesia betuletana*, Haw.

*Antithesia capreana*, Hüb.

*Antithesia prælongana*, Gn.—Corrected by Wocke to *sororculana*, Zetterstedt. This Professor Zeller confirms. It has been bred from birch by Mr. Chapman, of Glasgow.

*Antithesia Grevillana*, Curt.—A distinct species, well figured by Curtis. Wilkinson's reference of this figure (p. 25) to *prælongana* is altogether erroneous, not to say absurd, as it does not at all resemble that species.

Curtis describes it as follows (Brit. Ent., fo. 567):

> "Greyish-black. Head and apex of abdomen sub-ochreous, superior wings long "and narrow, variegated with interrupted black transverse lines and spots. A large "space at the apex white, forming two claws on the internal margin, with a long, grey, "*oblique line arising* at the posterior angle, and furcate at the extremity. The apex "*black, with white dots forming* two oblique stripes. Cilia black. Inferior wings "*yellowish-fuscous, palest at* the base, cilia of the same colour.

"Distinguished from its congeners by the narrower wings, which give it a more
"elongated form, and the cilia of the upper wings are not so black in any of the
"other species.

"Captured in July in Sutherlandshire."

The only specimen which I have seen was taken by Dr. Buchanan White in Scotland. Its long, pointed fore-wings of a dull black for *three-fourths* of their length, and with the apex and cilia also almost entirely black, and its comparatively *narrow* white band before the apex, give it a character very distinct from the allied species.

*Antithesia ochroleucana*, Hüb.

*Antithesia cynosbatella*, Linn.—Wocke sinks this name in favor of *variegana*, Hüb., quoting Linné's *cynosbatella* as a doubtful synonym. Zeller says "Linné's *cynosbatella* is ill-characterized, and feeds "in a *Rosa*, from which I never had this very common species."

*Antithesia pruniana*, Hüb.

*Antithesia dimidiana*, Treitschke, Sodof.—*ochromelana*, Gn., is a much later synonym. M. Jourdheuille states that the larva feeds on beech and lime: this is most likely an error. It has been bred in plenty by Mr. Chapman, of Glasgow, from *Myrica gale.*

*Antithesia marginana*, Haw.—Wocke changes this to *oblongana*, Haw., because Haworth's description of *oblongana* (the ♀) is placed before that of *marginana* (the ♂).

Wilkinson is mistaken in stating that this is "A rare species, and not variable." It varies considerably in size and a little in colour, and is far from scarce, occurring commonly in many woods, heaths, and even fens. It most likely feeds on various *Compositæ*, as it is found where no *Dipsacus* grows within many miles. Dr. White has found it very large and fine on Scotch mountain heaths.

*Antithesia similana*, Wilk.—Wocke sinks this (with a ?) into a synonym of *oblongana:* it certainly is nothing else. Mr. J. Jenner Weir has kindly placed in my hands some of the original specimens, and they differ in no respect from the ordinary small specimens of *oblongana* found always with the larger ones.

*Antithesia sauciana*, Hüb.

*Antithesia Staintoniana*, sp. n.

Alar. exp. 8 lines. Head, palpi, and antennæ greyish-brown, thorax blackish-brown, dusted with pale ochreous. Fore-wing: costa arched, with sharply angulated *square apex and truncate* hind margin. Ground colour pale cream, with the basal

**two-thirds dark bluish-brown, the portion between the basal patch and central fascia being paler, and showing the ground colour near the costa. Basal patch, with its outer margin, angulated near the costa, thence perpendicular to the dorsal margin. Outer margin of central fascia indented with the usual pale hook in the middle. In the pale apical third is a faint brown line, followed by a narrow brown cloud before the apex. Cilia cream-coloured, spotted with brown, and with a dark line at the base.**

**Hind-wings grey, with paler cilia.**

**♀ with the cream colour tinged with pink, and the outer margin of the basal patch oblique and nearly straight.**

Allied to *sauciana.* About twenty specimens were taken in 1869 by Mr. Eedle, on mountains in Perthshire, among *Arctostaphylos uva-ursi,* and were distributed into various collections under the name of *Grevillana.*

The description is made from males in the collection of Mr. Doubleday, and from a remarkably fine and perfect female in that of Mr. Machin.

Professor Zeller says of this species "I think it distinct both "from *sauciana* and *Grevillana,* and do not know a name for it. So "you may publish it as a new species: I never saw it before." It gives me particular pleasure to have the opportunity of naming so handsome a species in honour of my friend Mr. Stainton, to whose kindness I am constantly indebted, and who has so well earned any honour there may be in it by his labours among the *Tineina.*

*Antithesia gentianana,* Hüb.—Wocke alters this to *gentiana,* Hüb., referring to Hübner's figure of the larva, which represents it feeding on teazle. This deprives it of connection with the Gentians, which was evidently aimed at by the name previously in use, as well as by the more laboured *gentianæana* of Hübner and Wood, but this is of slight importance, since the larva feeds in the heads of *Dipsacus.* Professor Zeller says that the food certainly varies, since small specimens occur where no *Dipsacus* grows. This species is best separated from its allies by its broad wings and *stout thorax.*

*Antithesia sellana,* Hüb.—Mr. Doubleday tells me that the larva feeds in heads of *Centaurea nigra:* he also points out that this species may readily be separated from its nearest allies (*gentiana* and *oblongana*) by the peculiar *round apex* of its short anterior wings. This is very evident in specimens communicated by him.

*Antithesia ustulana,* Haw.—Wocke sinks this name (as does *Doubleday his Carbonana*) in favour of *fuligana,* Hüb., which is unquestionably the anterior. Some very fine and well-marked specimens (one of them having even a pale apical space in the fore-wing) were reared, three years ago, by Lord Walsingham, from larvæ found feeding in the stems of *Stachys palustris* in the Cambridgeshire fens. A closely allied species (sent by Professor Zeller, though probably in error, under the name of *Remyana*), with straight fascia, seems to frequent the *Stachys* in Germany.

*Penthina salicella*, Linn.

*Sideria achatana*, Fab.—Professor Zeller tells me that this species feeds on sloe. M. Jourdheuille states between leaves of hawthorn and fruit trees. Mr. Stainton assures me the insect swarms sometimes with him on a hawthorn hedge.

*Dichelia Grotiana*, Fab.

*Dichelia gnomana*, Linn.—Description:

Alar. exp. 9 lines. Head and antennæ reddish-ochreous. Palpi ochreous within, brown exteriorly. Thorax ochreous. Fore-wings shining ochreous, faintly reticulated with reddish-brown, and with the markings reddish-brown. Basal patch faintly indicated on the costa and inner margin. Central fascia most distinct on the costa, and running obliquely in a narrow line to the middle of the wing, where it forms a sharp angle towards the base, returning again (in a parallel direction to the upper portion) to the inner margin. The central angulated portion of this fascia is, however, in most specimens obliterated, leaving the oblique streaks on the costa and inner margin. Before the apex is a broad flattened spot on the costa. Cilia ochreous, faintly spotted with grey. Hind-wings whitish, tinged posteriorly with grey. Cilia whitish.

Some time ago the Rev. Henry Burney sent me for examination three specimens under the name of *Tortrix latiorana*. These I at once found to be *gnomana*. On enquiry, he told me that they had been sent him, fourteen or fifteen years ago, as varieties of *Tortrix costana* by Mr. J. B. Hodgkinson. On further enquiry of Mr. Hodgkinson, it appears that they were taken with other *Tortrices* by a local collector, and sent to him as *Tortrix costana;* but he cannot now remember where they were taken. Under these circumstances, I venture to insert *gnomana* as an addition to the British list, as there can be no doubt, I think, of their nativity. *Gnomana* is a common species abroad, and very likely to occur here. It has already been in our lists, but apparently a variety of *Peronea ferrugana* has been mistaken for it.

*Œnectra Pilleriana*, Schiff.—Zeller says "I bred it from Dictamnus "*albus* from Vienna. Its principal food is vine, but it will probably "feed on any plant." M. Jourdheuille says *Stachys germanica*. Mr. Stainton bred it this summer from larvæ sent to him from the South of France on *Asclepias vincetoxicum*.

*Clepsis rusticana*, Treitschke.—German specimens of this species are larger than ours.

Norwich: *October 9th*, 1872. p. 212.

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## NOTE ON OUR RECENT INVASION BY *VANESSA ANTIOPA*.

BY F. BUCHANAN WHITE, M.D.

More than half inclined as I am to accept Mr. Stainton's theory of the Scandinavian origin of the numerous specimens of *Vanessa Antiopa* that have been captured or seen in Great Britain during the past autumn, yet it occurs to me that a word or two might be said against the "flown-over" theory.

1st.—Although most of the specimens recorded were seen on the east side of the country, yet this may only show that *V. Antiopa*, like several insects and plants which there can be no doubt are indigenous, has a greater preference for the east, than for the west, side of the country.

2nd. — Mr. Stainton notices the relative distribution of the white-bordered and the yellow-bordered forms, and shows that, if the specimens in question are immigrants, they must have come, most probably, from Norway.

On the other hand, might it not be argued, that (supposing *Antiopa* were not known to have occurred in Britain) the similarity between the Scandinavian and British Faunas would lead one to predict that the form which might be expected to occur (at least in the north of England and Scotland) would be the white-bordered one.

Or again, seeing that the majority of the records (both past and present) of this species are from the north-eastern counties of Britain (I have records from almost every eastern county of Scotland, from Berwickshire to Morayshire), is it not more probable that the northern, rather than the southern, form should be the occurring one.

3rd.—As to the irregularity in the periods of its appearance (at least, in unusual numbers) in this country, several of the *Vanessidæ* are notorious for their irregularity. *Pyrameis cardui* is a notable instance, and *Vanessa polychloros* is also, I believe, subject to it. This latter insect (*V. polychloros*) has been taken during the past autumn in Aberdeenshire, in a locality where *V. Antiopa* has also appeared.

Is it, too, then a fellow-voyager with the alleged "Viking" *Antiopa?* Is it not possible that, if we had records extending over a greater period of time, it would be found that the appearances (in numbers) of these irregular insects were in cycles of years?

4th.—The fine condition of many of the specimens can only show that they have not "suffered a sea-change."

5th.—That larvæ have not been found does not go far to support either side of the question; for, though the larvæ of many of our common butterflies are so rarely seen, yet, from its habits, I imagine the larva of *Antiopa* should not be difficult to find.

Eastferry, by Dunkeld: *October*, 1872.

## THE RECENT INVASION BY *VANESSA ANTIOPA.*

BY D. SHARP, M.B.

I cannot see any way of accounting for the simultaneous appearance of numbers of *Vanessa Antiopa* over the country except by immigration; but, if this be the case, the insect must possess great power of rapidly distributing itself.

I once observed a number of the larvæ of this species (in the Asturias) feeding on a willow *bush*, and not near the top.

I much wish all the evidence as to condition of specimens, &c., could be collected and collated, as the questions involved appear to me of considerable importance.

If a large portion of the specimens be in good condition, immigration would seem doubtful; while, if the immigration theory be true, some light should be thrown on the question of the locality of their origin, by a knowledge of the facts as to condition of specimens. The district where most specimens were found (especially if in good condition), would appear to indicate the point where they landed, at any rate.

Thornhill, Dumfries:
*September* 30*th*, 1872.

## DESCRIPTION OF A NEW SPECIES OF *DAMASTER* FROM JAPAN.

BY E. C. RYE.

**Damaster Lewisii**, *sp. n.*

*D. blaptoidi proxime affinis; staturâ minore, pedibus comparatim brevioribus, thoracis lineâ lævi medianâ longitudinali nullâ vel obsoletâ, elytrorum apicibus multo minus productis, discedens.*

*Long. corp. (summis mandibulorum elytrorumque apicibus inclusis)* 42—48 *millim.*

*Habitat* "Hiogo," *in insulâ* "Nipon," *et* "Simabara," *in insulâ* "Kushiu" *Japanorum.*

In the present state of our knowledge of the members of the genus *Damaster*, I believe myself justified in considering as a distinct species the insect of which the diagnosis appears above, and which was detected and brought to this country by my friend, Mr. George Lewis, from two widely separated (by some 400 miles) Japanese localities, one at Hiogo, on the coast of Nipon, the largest island of the group, and the other on Simabara, a volcanic mountain on the coast of the smaller island Kushiu,—both of which are sandy districts. I have myself seen upwards of forty examples of this insect, which, from its smaller size, and shorter legs and elytral mucro, seems well separable from *D. blaptoides*, to which, however, it is most certainly closely allied, and which appears only to be found in deep peaty woods on old granitic formations, and to be excessively restricted as to locality, occurring on the hills at the back of Nagasaki.

In addition to the above-mentioned characters of smaller size (varying from nearly 1½ inches to nearly 2 inches, whereas *blaptoides* is always considerably over the latter measurement), comparatively shorter legs, much shorter mucronated apex of the elytra (in which respect it seems intermediate between *blaptoides* and *Fortunei*, which is only known to occur at Yokohama), and obsolete or absent thoracic smooth median line, I observe that, comparing these insects in the bulk with *blaptoides*, they are apparently rather more convex, and have an apparently shorter thorax, which is rather more contracted in the lower third before the posterior angles. But I can find no other differences; any fancied discrepancy in colour or punctuation disappearing on the comparison of a number of specimens. As regards the mucronated apex of the elytra, individual peculiarities, and even unsymmetrical developments in the same specimen, occur in all the species; but, allowing every possible latitude in this respect, the difference remains very marked between *blaptoides* and *Lewisii.*

I do not know whether it has been observed before, but it seems to me beyond doubt that the elytral mucro is longer in the male sex of all the species.

*D. Fortunei* differs widely from the insect now under consideration in its merely rudimentary elytral mucro, much shorter, wider, and laterally sinuous thorax, which is usually somewhat brightly metallic, more oval elytra, shorter and stouter limbs, &c.; and the small size, brightly metallic thorax, and rough punctuation of the elytra of *D. rugipennis*, Mots. (*auricollis*, C. O. Waterhouse), which *occurs at Hakodaté* in the North-eastern island Yesso, render any *comparison with that* species unnecessary.

I have much pleasure in dedicating this insect to Mr. Lewis (who practically also discovered *D. rugipennis*, as he described it to me in a letter from Japan before the publication of the late Colonel Motschoulsky's description); for, supposing that future explorers may detect satisfactory links between it and *blaptoides*, it will still apparently deserve recognition as a well marked race. It may, however, be observed, that during a period of nearly eight years Mr. Lewis and his native collectors have especially sought for *Damaster* in any form in very many localities.

From Mr. Lewis's account, these insects are known by the native name "Biwa-Mushi," or "banjo-beetle," derived from their fiddle-shape; and the majority of his specimens were caught by native wood-cutters on the floors of their open dwellings on the hill-sides at night, or immediately after early dawn.

10, Lower Park Field, Putney, S.W.:
*14th October*, 1872.

## NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 2).

BY F. BATES.

EPIPHYSA OVATA, *sp. n.*

Entirely black, more or less shining, and with only a trace of the villose hairs that clothe the head, between the eyes, in *E. flavicollis;* labrum not ciliate with long hairs; middle lobe of epistoma squarely truncated in front; sides of prothorax much less thickened than in *E. flavicollis*, and without the coarse, longitudinal rugosities exhibited by that species; anteriorly on each side, and within the margin, are a few large well-defined punctures, the margin itself being studded with small tubercles; the elytra are much narrower behind the shoulders than in *E. flavicollis*, which gives to the body a more regularly oval form; the discs are distinctly but irregularly punctured, and sprinkled with small, scattered granules, which become larger and more numerous near the margin and apex; the epipleuræ, or inflexed portions of the elytra, are studded with large, well-defined, oblique tubercles, which become smaller and more dispersed near the inner edge, or epipleural fold (in *E. flavicollis* the tubercles on the epipleuræ are smaller, flatter, more confused, and thickly interspersed with granules): the punctuation, &c., on the under surface, is much lighter, the legs less asperate, slightly longer and more slender than in *E. flavicollis;* the prosternum is not channelled throughout its length, but the apical two-thirds are depressed and longitudinally corrugated (in *E. flavicollis* the prosternum is strongly grooved, or channelled, throughout its length, and this groove gradually opens out as it approaches the front). Long. 9—9½ lines.

*Hab.:* Benguela; two examples.

My comparisons of these two species are based upon six examples of *flavicollis* and two of *ovata;* in four of the examples of the former (which I assume to be the typical form) the whole surface is densely opaque, the prosternal groove, and the "pad" (or "bourrelet" of Lacordaire) formed on each side by the widening out of this groove anteriorly, is quite smooth and impunctate; the meso- and metasterna and the two first segments of the abdomen are *moderately* rugose and punctured: in my fifth example, which I shall consider var. *b* (? a sex of the type), the surface is not so opaque, the whole of the prosternum between the coxæ (both groove and pad) is very strongly corrugated, and, on the pads, punctured; the mesosternum is strongly and somewhat obliquely corrugated, the intervals between the corrugations being coarsely punctured; the metasternum is strongly reticulate-punctate; the first segment of the abdomen (and the second also, but in a less degree), on the middle, is coarsely punctured and longitudinally rugose: in my sixth example, which I shall consider var. *c*, the whole surface is still less opaque than in var. *b*, the markings on the underside are similar in character, but less strong in degree; the head above is *glabrous*, and the middle lobe of the epistoma is sub-truncated, and without the three blunt teeth at the fore-margin: this var. would seem to form a link connecting the two species, but there are, I think, too many and important differences to permit of their being considered as one species.

EPIPHYSA CILIATA, *sp. n.*

In this species the form is more elongate and still more regularly oval, and less convex, than in the preceding; the elytra are slighly opaque by their entire "ground" surface being very minutely granulated; the head is more strongly villose above than in *E. flavicollis*, the hairs extending further down on each side, entirely filling up the grooves that mark off the lateral lobes of the epistoma; the middle lobe of the epistoma is squarely truncated in front; the labrum is ciliate with long hairs anteriorly; the margins of the prothorax are rather coarsely punctured; there are also a few other punctures on each side, within the margin, both in front and at the base, and from each of these punctures (as well as from those on the margin) arises a long, pale-golden hair, those on the margin being sub-erect; the discs of the elytra (besides the "bottom" or "ground" character already mentioned) are vaguely punctate, and are sprinkled with minute granules; the sides, apex and epipleuræ are tuberculate as in the preceding species, but from each tubercle on the epipleuræ arises a long, sub-erect, pale-golden hair, so that the elytra, when viewed from above, appear ciliated; the prosternum is not channelled throughout its length, but the longitudinal depression is deeper and more marked than in the preceding species.

Long. 11¼ lines.

*Hab.*: Angola; a single example.

ARYENIS HAAGI, *sp. n.*

*Differs from A. rufescens* in being smaller; the colour, especially of the head *and prothorax* (*which* approaches castaneous) much deeper; the antennæ and legs, relatively, more robust; the antennæ, especially, being stouter, the joints more cylindrical, squarely truncated at the apex and tipped with black; the last joint is scarcely as long as the preceding and tapers to a fine point; the eyes are smaller, narrower, a little less approximate beneath and, relatively, more coarsely facetted; the punctuation of the head, prothorax and under-side is much stronger, coarser and closer; the hind tibiæ are straight. Long. 3½ lines.

*Hab.*: Peru; a single example.

In the strong and close punctuation of the head and prothorax this species assimilates itself to *Chorasmius procerus;* but, whilst in *Chorasmius* the antennæ are as in *Aryenis rufescens*—with the majority of the joints elongate-obconic and sub-nodose at the apex—in the present species these organs more closely approach the form seen in *Evaniosomus*, having the joints relatively stouter, shorter, sub-cylindrical, and truncated at the apex.

The large, sub-prominent eyes, approximate beneath, the sub-cylindrical prothorax, and the presence of wings, clearly associate the present species with *A. rufescens.*

CHORASMIUS, *mihi.*

To the characters already pointed out by me (Trans. Ent. Soc., 1868, p. 310, note) as separating this genus from *Evaniosomus*, it is necessary to add, that the elytra are entirely margined at the base.

Leicester: *October*, 1872.

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*Note on the occurrence in England of Anisotoma brunnea (Sturm), Er., a distinct species from A. obesa, Schmidt.*—Among an enormous number (nearly 300!) of examples of various species of *Anisotoma* recently taken by my valued correspondent, Mr. R. Lawson, out of flood refuse near Scarborough, and kindly sent to me for examination, I find a few individuals, of both sexes, which are evidently to be referred to a very distinct species, and one certainly not as yet recorded as British. This I cannot think to be any other than Erichson's exposition (Ins. Deutschl. iii, p. 72) of *A. brunnea*, Sturm, attributed by Dr. Kraatz (in Stettin. ent. Zeit. xiii, p. 379) to *obesa*, Schmidt, as a small form; an opinion in which he has hitherto been followed by all writers. I feel sure, however, from the characters mentioned by Erichson for *A. brunnea*, and from these specimens of Mr. Lawson's agreeing so exactly in every respect therewith, that Dr. Kraatz must have been misled by some confusion in Erichson's real or supposed exponents of *A. brunnea*. Dr. Kraatz's opinion is apparently founded on the fact that the words of Erichson's descriptions of the two insects are in some instances applicable to both. But, on Dr. Kraatz's own shewing, the two are quite distinct, for he emphatically points out the strong and somewhat distant punctuation of the striæ as a character for *obesa;* whereas Erichson states that in *brunnea* it is "meist ziemlich dicht und fein." Besides this important discrepancy, Erichson's *obesa* is 1⅔ lin. long, in the section with strongly dilated anterior tibiæ, convex, with an ample thorax and the 3rd joint of its antennæ double as long as the second, and (in the ♂) with the anterior tarsi slightly dilated, the posterior femora with an obsolete denticle beneath at the lower apex, and the posterior tibiæ *bi*-arcuate (as in *dubia*, ♂); whereas his *brunnea* is from ¾ to 1 lin. long, in the section with linear anterior tibiæ, only slightly convex, with thorax rather narrower than its elytra, 3rd joint of antennæ only somewhat longer than the 2nd, and (in the ♂) with the anterior tarsi not at all dilated, the femora not even obsoletely toothed beneath, but terminating in an obtuse angle, and the tibiæ *singly* curved. These important differences are not mentioned by Dr. Kraatz. *A. obesa*, in fact, *very* strongly resembles large-sized *dubia*, but is of shorter and broader, with a narrower club to its entirely ferruginous antennæ, more acute posterior angles to its less strongly punctured thorax, and coarser and more remote punctures (especially towards the base) in the striæ of its elytra. I am indebted to Dr. Power for the sole British exponent I possess of this species.

*A. brunnea*, according to Erichson and Mr. Lawson's specimens above mentioned, averages rather less in size than *calcarata*: it is *entirely* ferruginous, shining, with a narrow club to its concolorous antennæ, of which the apical joint is not narrower than the preceding; its thorax is not sinuate at the base on each side, and has its posterior angles almost as acute as in *litura* (*ornata*, Fairm.); the striæ of its elytra are (for an *Anisotoma*) fine, with the punctures small and closely packed (I observe, moreover, that the striæ are rather irregular, the 3rd one especially being slightly waved outwards about the middle). The hind legs of the fully developed ♂ are much after the scheme of the same sex of *A. litura*, but the tibiæ are not so elongate or so much curved inwards at the apex, and are broader throughout (the narrower and entirely ferruginous club, with comparatively wider apical joint, at once separate this species from *A. litura*).—E. C. Rye, 10, Lower Park Field, Putney, S.W.: *October*, 1872.

*Note on Anisotoma lunicollis, Rye.*—The opportunity of examining a few more specimens of this most distinct species enables me to add to my original description the fact that its elytra are set with very short and scattered ciliæ just above the outer margins, somewhat after the fashion of *A. furva* and *ciliaris*, though in a much less marked degree. The outer edge of the anterior tibiæ, also, is not so straight as usual, being somewhat irregular between the roots of the spinose setæ.—Id.

*Note on "carding" beetles.*—As I do not think it probable that the opportunely introduced strictures of my esteemed colleague, Mr. McLachlan (note, p. 103 of the present vol.), are founded upon any personal acquaintance with the system of mounting *Coleoptera* on card, I can only presume that they are based upon inferences erroneously deduced from its apparent inapplicability to specimens of the Order upon which he is now writing. But I can safely assert, in reply to his sweeping condemnation of a practice employed by all British Coleopterists, that *I* have never had the least difficulty in readily floating off and examining the under-sides of beetles so mounted. If my colleague *has* tried the system, he must, I think, have used some unfit medium for mounting; at all events, the "gum beclogged tarsi," to which he so pathetically alludes, have never come in my way, as I have always found a moderate amount of tragacanth capable of almost instantaneous removal. If it were worth while to defend the system of carding against mere random objections, it could be urged that this little trouble of floating off specimens to examine their lower sides is the sole semblance of a valid objection to it; and that this objection seems much more than counterbalanced by the infinitely better and safer condition and capability of manipulation and transmission of carded specimens, the natural facies of which (especially of *Malacodermata*, *Brachelytra*, &c.) can only be so preserved, by their freedom from the initial distortion and damage and subsequent (often speedy) destruction by verdigris consequent on pinning, and by the much better view that is thereby obtainable of the proportions and structure of limbs (for it is quite a mistake to suppose that minute characters escape observation in carded beetles: Mr. Wollaston, the introducer and constant employer of the system, cannot well be accused of omitting to notice anything). As regards mere facies, I hope my colleague will pardon a rash opinion, not founded on practical acquaintance, that, in a series of each species, a single carded specimen of one of the smaller objects of his study, mounted by a competent hand, seems to me more likely to preserve the semblance of nature than the usual shrivelled and distorted pinned examples which may more readily exhibit (when you can get to see them) minute structural details.

In this country, with its comparatively small amount of insect life, there seems little doubt that carding is the best method for preserving beetles: in more prolific regions, it might not be worth while to pursue it, on account of the slight extra waste of time entailed by it. But, so far from the practice being on the wane, as my colleague thinks, it is apparently on the increase. In the last two parts of 'L'Abeille,' M. de Marseul publishes copious directions by MM. Meyer-Dür and Leprieur for mounting insects on card, accompanied by an able exposition of the benefits thereby accruing; though, curiously enough, tragacanth does not appear to be known to either of those gentlemen, nor do they seem to be aware of the long space of time during which the system has been in use elsewhere.

I do not know where my colleague often sees carded *Carabi*. English Coleopterists generally draw the line at *Harpalus* or thereabouts.—Id.

*Vanessa Antiopa in Dumfries-shire.*—On Saturday afternoon, 31st August, when turning the corner at the entry of the grounds here, a large butterfly flew up from the grass, almost from under my feet, causing me to start back, and the next moment I recognised it as *Antiopa*. It flew up and away very swiftly and strongly (indeed, a strong wind was blowing at the time), yet I had time not only to see that it was the Camberwell Beauty, but that it was worn and in bad condition.—D. Sharp, Thornhill, Dumfries: *September* 30*th*, 1872.

*Vanessa Antiopa near Colchester.*—About a dozen specimens of *V. Antiopa* have been captured hereabouts, and several others have been seen. I captured two under pear trees, and four others were captured under other pear trees close by the same spot. Two were taken on a fig tree attracted by the ripe fruit. Three or four have been captured by boys and working men, who have maltreated them grievously. One was brought me with a thorn thrust through the thorax; another in a basket with a log of wood upon it to keep it quiet; and two were discovered nailed up on a shoemaker's door by a man who works for me. Sleepy pears seem to possess especial charms for them.—W. H. Harwood, St. Peter's, Colchester: *September* 19*th*, 1872.

*Occurrence of Vanessa Antiopa again near Eltham.*—My unentomological friend, who captured the *Vanessa Antiopa* recorded in last month's Magazine, secured another specimen on the 29th ultimo: this time in his dining room, into which it flew through the open window about mid-day, resting on the table, and allowing a tumbler to be placed over it. From its feeble flight, and from the sluggish state it is now in (for it is still alive), it was no doubt seeking a place wherein to hibernate.

With the exception of being slightly damaged at the edges of the hind-wings, the specimen is in excellent condition, and hardly gives one the idea of having migrated. The band is of a pale cream colour, and the ground colour a richer chocolate, and the blue spots brighter, than in the other example.—A. H. JONES, Shrublands, Eltham: *2nd October*, 1872.

*Vanessa Antiopa at Southsea.*—A very good specimen of *Vanessa Antiopa* was captured at Southsea by my nephew, on September 3rd.—L. M. S. PASLEY, Moorhill, Fareham, Hants: *September 21st*, 1872.

*Vanessa Antiopa.*—There have been in all, three specimens of *Antiopa* taken here; one at Saltburn, three near Richmond, and one near Barnardcastle. Two or three were also seen since the last captures. The first seen (by a collector) flew as if the wings were soft, flappy and slowly, and was evidently quite fresh. It just managed to escape by popping over a hedge. One seen three weeks after was also quite fresh and perfect. I fancy many of those which are rubbed have become so through handling, as the two I took had both been caught in the hand, by a lady, a few days before, and let off again. This was in the same garden I took them in, and which they had frequented every day till I caught them.—JOHN SANG, Darlington: *14th October*, 1872.

*Vanessa Antiopa at Guestling, near Hastings; and at Suffolk.*—A specimen of this insect was taken here in the beginning of this month: I do not know the exact date. I send also an extract from the 'Ipswich Journal' of, I believe, August 31st: "A fine specimen of the Camberwell Beauty (*Vanessa Antiopa*) was caught in the "Rectory garden, Little Glemham, by Master R. H. King, on Friday last [probably "August 23rd]. This is the second within the last two seasons that has been caught "here. On the following day, another specimen was taken by Master W. Long, at "Tuddenham Vicarage, and another perfect specimen was taken on the 25th inst., "by Mr. W. Dounes, of Bungay."

I have since heard that they have caught two or three at Little Glemham.—E. N. BLOOMFIELD, Guestling Rectory: *September 21st*, 1872.

*Vanessa Antiopa.*—I cannot agree in the opinion suggested by my kind friend, Mr. Stainton, that the specimens of *Vanessa Antiopa* which appeared in this country in August and September were of continental origin. I believe every one of them was bred in this country.

Moses Harris gives figures of this species in his 'Aurelian,' and does not say that it was uncommon when he wrote, a century ago. He states that "the caterpillar feeds on willow, and is always found on the highest branches; its manner "of feeding, time of change, and all other parts of its history are exactly similar to "those of the peacock, so that I think it will be quite unnecessary to say anything "further. The fly appears at exactly the same time as the peacock."

There does not appear to me to be anything more remarkable in the appearance and disappearance of *Vanessa Antiopa*, than of many other species. *Vanessa polychloros* was formerly one of our commonest butterflies here; it then suddenly disappeared, and for ten years I did not see a single specimen, but last year it again appeared in tolerable plenty. Many of the *Noctuæ* disappear and re-appear in the same way, without any apparent cause.

There is a peculiarity in the appearance of British specimens of *V. Antiopa* which at once distinguishes them from the continental ones, independently of the difference in the colour of the border of the wings.—Henry Doubleday, Epping: *October* 12*th*, 1872.

*Eulepia cribrum at Wimbledon Common.*—On the 26th of July, I went to Wimbledon Common in the hopes of catching *Vanessa polychloros*, which I had seen there two days previously. On my way to the spot, I found a colony of *Zygæna trifolii*, a species I have never seen in this district before. Arrived at the ground, I soon took a *V. polychloros*, and while vainly searching for more, took several *Endotricha flammealis* in very fine condition. Thus engaged, I stumbled across a fair specimen of *Eulepia cribrum*, to my great surprise. I shall be glad to learn if this insect has been taken in this locality before. A second expedition with my friend, Mr. J. B. Blackburn, was a failure. On my way home, I found in a spider's web a wing of *Leucania conigera*, which species I believe to be new to this locality; and in the middle of August, *A. puta*, also new to Wandsworth, occurred on lamps. —G. B. Longstaff, Southfield, Wandsworth, S.W.: 4*th October*, 1872.

*Sterrha sacraria at Manchester.*—On the evening of September 5th last, I was at the Freemasons' Hall, in Manchester, attending one of the Masonic Lodges held there. After "Labour," we adjourned to "Refreshment," and, on entering the Banquetting Room, I saw a whitish-looking moth flying round a gas pendant; just as I took my seat it fell upon the table, on to the side of a plate opposite to me: to my astonishment, it was *Sterrha sacraria*, a fine one. A more unlikely place for it I could scarcely imagine. I attempted to box it, but before I could do so, it flew up to the gas, and came down wingless.—John T. Carrington (late of York), Manchester: *October*, 1872.

*Zelleria saxifragæ.*—This species is no longer unique as British. I saw several specimens, and captured one or two, when botanising in Glen Lyon, Perthshire, last August. The specimens were flying in the afternoon among *Cystopteris montana* and (what is more to the point) *Saxifraga hypnoides*, *aizoides*, &c., on some rocks at an elevation of about 2500 feet. This is about 1100 feet higher than the locality in Braemar for this species.—F. Buchanan White, Dunkeld: *October*, 1872.

*A short account of a four days' trip to Sherwood Forest.*—On Tuesday, August 20th, Mr. Porritt, of Huddersfield, Mr. Mosely, of Almondbury Bank, Huddersfield, and the writer of this, started for Worksop, *en route* for Sherwood Forest, for the purpose of collecting larvæ and moths. We arrived at the quiet village of Edwinstowe, where we settled our head quarters at the "Royal Oak." Our whole time during the day was spent in searching for larvæ, pupæ, &c., and at night in sugaring, —and a most successful time of it we had. We met a son of Mr. Birchall, of Leeds engaged in the same work, who joined our party. The beating for larvæ was not a great success, as we only took a few good things :—five larvæ of *N. dodonæa*, two of *N. dromedarius*, two of *A. leporina*. Amongst the others were plenty of *E. punctaria*, *A. betularia*, *C. prasinana*, &c. The pupæ of *A. aprilina* seemed very scarce, as we only got half-a-dozen between us. The sugaring at night was a great success, although the variety of captures was not large. The following is a list of the captures :—*C. diluta*, *X. polyodon*, *C. Cytheria*, *L cæspitis* (flying over the heath), *T. janthina*, *fimbria*, *orbona* and *pronuba*, *N. glareosa*, *Dahlii*, *bella*, *neglecta* (I got a fine specimen of the grey variety), *xanthographa* (in hundreds), *O. suspecta*, *E. fulvago* (of this pretty moth, we took about 500 specimens between us), *C. trapezina*, *A. occulta* (one specimen of this fell to my lot), *G. libatrix ;* and each of us was so fortunate as to procure specimens of the scarce *S. anomala*. We took several specimens of the beautiful *Crambus pinetellus*, one worn *T. quercûs*, and one *A. Adippe*. At ragwort, we found many *C. graminis* throughout the day. The numbers of *E. fulvago* taken this year must have been very large, as there were other collectors there who were equally successful.

Such is a short account and list of captures during about four pleasant days; and we all returned to our several destinations well pleased with our success.—G. C. B. Madden, Almondbury, Huddersfield: *August* 26*th*, 1872.

*Captures of Lepidoptera in Sherwood Forest.*—I captured a splendid albino variety of *Polyommatus phlæas* in this locality on the 18th of August last. The usual copper colour is replaced on all the wings by a beautiful creamy-white. The specimen is a female, and in good condition.

*Noctuæ* came to sugar in extraordinary numbers; oak-feeding species being the most abundant. *Euperia fulvago* was unusually common, as many as 157 having been taken in one night. This moth occurred in almost every conceivable situation, —at sugar, flying in the sunshine, on tree trunks, on flowers, and by beating from oaks. *Noctua glareosa*, *neglecta* and *Dahlii*, *Stilbia anomala*, and *Crambus inquinitellus* and *pinetellus* were well represented; and other entomologists during the same week captured *Luperina cespitis*, *Neuria saponariæ*, and *Aplecta occulta*. A specimen of *Vanessa Antiopa* was seen but not captured, and others were heard of from residents at Edwinstowe.

As the conditions under which sugar proves attractive to *Noctuæ* are still somewhat uncertain, I think it may be of interest to mention that on the 17th August (the day I started for Sherwood), the wind changed from W. to E., and remained E. and N.E, during the week of my visit. There was also a sudden rise in temperature coincident with the change of wind. On August 16th, the highest marked by the thermometer was 63. On August 17th it rose to 85, and remained high during the week, the highest daily reading never sinking below 75. No rain fell to the 22nd, and on that day the numbers of *Noctuæ* diminished; the 23rd was a 'real bad' night. I may also mention that during the whole time we were favoured with a clear sky, and the full light of a harvest moon.

Larvæ were scarce, though a considerable number of *Notodonta dodonea* were taken.

A full-fed larva of *Cossus ligniperda* was brought to me at the Inn by a labourer. He had found it walking across a path, and had put it carefully into a tobacco box. He informed me that he had "got a fearful brute," and proceeded to open the box at arms length on the floor, the landlady standing by with her apron in her mouth. As soon as I saw it, I took it up: "Lord," says he, "I darnt ha' done that for a "week's wage. I niver seed such an a beast afore i' all my puff."—HOWARD BIRCHALL, Kirkstall Grove: *October 6th*, 1872.

*Captures at Witherslack: Argyrolepia luridana and other species*—On the 18th of July, I went 40 miles north from Manchester, in hopes of again meeting with *A. luridana*. Although the day had been fine, the rain came down in torrents before I reached Grange, and from there I had four miles to walk, so that it was nearly dark by the time I reached the locality for *A. luridana*. I only boxed one *Pterophorus Bertrami* and a few *Argyrolepia badiana;* nothing else was stirring, except *Crambus culmellus* and a few common *Geometridæ*.

The next morning, on the bank opposite the Inn, I found a specimen of *Catoptria Westwoodiana* (*expallidana*), but could not find a second. An odd specimen of *Crambus falsellus*, *Lithosia complanula*, and worn specimens of *Eupithecia distinctata*, were all I could beat out of the dripping wet yews and hollies. So I resolved to go over Whitbarrow: on the moss I had to pass, I saw *Hyria auroraria*, *Cnephasia lepidana*, and larvæ of *Hadena glauca;* on Whitbarrow itself, I saw nothing worth boxing, only *Elachista Gleichenella* and *Argyresthia dilectella*, and an odd specimen of *E. triseriatella*. As I returned, I took a fine *Argynnis Aglaia* settled on some wild thyme: it is the *Charlotta* variety.

In the evening I was joined by a young friend, Mr. H. Threlfall, and we took one *Coleophora fuscociliella*, 72 *Hypenodes humidalis*, together with sundry *Ebulea crocealis*, *sericealis*, *Dicrorampha consortana*, *Catoptria Scopoliana*, *Pterophorus Bertrami*, *osteodactylus*, *plagiodactylus*, *bipunctidactylus*, *Parasia Metzneriella*, *Coleophora limosipennella*, *pyrrhulipennella*, *viminetella*, &c.

The next morning we went on to the moss to look for *Elachista serricornis*, but could not find a single one, nor even *E. rhynchosporella;* the only thing worth pinning was *Coleophora juncicolella*. In a dark shady place, we took a fine *Cnephasia Penziana*. We then turned to larva hunting, and I got what I expect will prove to be larvæ of *Dep. pallorella*, and found a fine larva of *Calocampa exoleta* feeding on the hawkweed. Then we collected a number of *Nemotois minimellus*, *Gelechia senectella*, *Gracilaria auroguttella*, &c. It was now nearly nine o'clock, and I was quite giving up all hopes of *A. luridana*, when a moth flew past me and settled on a twig in the hedge, and I saw it was *A. luridana*, and made a dash at it, and secured it: a rather worn male specimen (the *first* week in July is the proper time for this insect); this is the seventh specimen I have taken.

On our way home on the following morning, we met with a fine *Pterophorus Bertrami* by the road side, and boxed a score of *Euchromia rufana*.—J. B. HODGKINSON, 15, Spring Bank, Preston: *August 12th*, 1872.

*Morayshire Noctuæ in* 1872.—When, in December last, I made up my yearly return of captures in Morayshire, I imagined we had experienced as bad a season as possible. The result of the past season, however, has been infinitely worse. Indeed, from the almost constant rain and low temperature, most of the *Noctuæ* usually common here have been either very scarce, or entirely wanting.

For comparison with other localities, more than to record rarities, I venture to give the result of my doings here.

February 20th—Found many larvæ of *S. anomala;* they are best found by the aid of a lantern, for they feed quite exposed at night on grass: the moth afterwards in the *autumn, sparingly*. I also bred *Anarta myrtilli*. March 14th—On the willow and sallow catkins, *T. satellitia*, *C. exoleta*, *C. vaccinii*, *T. gothica*, *stabilis* and *instabilis*, and *T. piniperda;* contrary to my usual experience, the female catkins seemed the most attractive. 15th—*C. flavicornis* at rest on a white wall, afterwards common in similar places. 18th—*T. rubricosa*, rare, at palms. April 9th—After heavy snow and frost, took my first pair of *T. gothicina* on sallow blooms on high heather-clad land. This is the same locality that has in previous years yielded me *gothicina*, which I never saw in the low country, where *gothica* swarms: this fact seems worth recording. 10th—Saw fine *E. versicolor* and many *B. parthenias* in the Altyre Woods. 17th—Bred the first of a fine series of *H. rectilinea* from Aberdeenshire larvæ. 25th—Bred *A. ligustri;* the moth afterwards was more plentiful at sugar than I ever knew it before. Swept 27 larvæ of *A. agathina*, and afterwards hundreds more: I can, however, never succeed in getting this species into pupa. The moth in August was very scarce. May 4th—Swept 45 larvæ of *A. agathina*, and one *N. neglecta*. 7th—Larvæ of *E. nigra* very abundant on plantain. 12th—Bred *C. umbratica;* the moth later on occurred over flowers and at rest. 24th—Dug out of tufts of *Salix repens* in the Culbin Sands, 156 larvæ of *A. præcox*, and one *A. valligera*. 27th—First *G. libatrix* at sugar, afterwards common. 28th—*C. cubicularis* at rest: very early? 29th—*X. rurea* and *H. thalassina*, both common at sugar. 30th—Swept a larva from heather which could be no other than *P. interrogationis*. June 4th—*H. adusta*, common at sugar. 6th—*T. batis* and *A. rumicis*, both common at sugar. 7th—*D. coryli* at rest; bred *C. Cytherea*. 9th—*D. capsincola* over *Lychnis*. 11th—*H. dentina* at sugar. 13th—*P. gamma* over flowers; many larvæ on nettles in August: *N. plecta* at sugar. 14th—*M. anceps* and *R. tenebrosa* at sugar. 18th—*M. brassicæ* at rest; *M. fasciuncula* very abundant at sugar. 19th—*N. rubi* abundant; *E. lucipara* and *N. brunnea*, both common at sugar (the former much more so than usual); *A. basilinea* and *A. suffusa* also at sugar. 22nd—Larvæ of *A. tritici* swarming in the garden. I had hundreds turned to pupæ, which, however, yielded me only one moth, the others being all infested with *Ichneumon sarcitorius*. I only took one specimen of *tritici* afterwards at rest, instead of hundreds as in former years. First *X. polyodon* at sugar; very abundant later on; both the dark and ordinary forms. 24th—Many *H. oleracea* at sugar, with *M. strigilis*, *H. adusta*, and *N. conflua;* the latter unusually abundant. 26th—*N. augur* at sugar; also *A. nebulosa*, which has occurred here far more abundantly this year than before. 27th—*L. lithargyria* at sugar, with *A. gemina*, *A. segetum*, *N. c-nigrum*, and *T. pronuba*. 29th—*A. exclamationis* and *N. festiva* at sugar. 30th—*A. porphyrea* with net. July 1st—*A. ligustri* at sugar; very common. 3rd—*A. corticea* at sugar; *H. contigua*, rare, at Cossus-birch. 4th—*Cossus ligniperda* at rest. Took with net three *H. marginata* over *Ononis;* they were plentiful, but past their prime. 6th—*T. subsequa* at sugar; a month earlier than usual. I only took five or six afterwards, one specimen shewing a remarkable tendency to melanism. *C. blanda*, rare, at sugar. 9th—*N. triangulum* was uncommon at sugar; *L. conigera*. 10th—*M. typica* at sugar. 11th—*A. oculea* at sugar. 12th—First dark *orbona* at rest; afterwards many at sugar, but not so abundant as last year, although I got some varieties I never saw before. 13th—*N. baja*, common at sugar. 18th—*L. impura* at sugar, rare. 21st—*P. v-aureum* over *Lychnis*, much less common than usual. 22nd—*T. fimbria* at sugar; also *M. literosa*. 25th—*A. valligera* on Cossus-birch and at sugar; *N. xanthographa*, rare, at sugar. 28th—*A. nigricans* bred; larvæ of *D. cucubali* from *Silene*. 29th—First *L. pallens* at sugar. August 1st—Took *P. bractea* over knap-weed, but lost it again. 6th—*N. depuncta* at sugar. 8th—*X. cerago* at sugar. 10th—*N. Dahlii*, first at sugar, afterwards plentiful. 13th—*E. fulvago*, only one at sugar.

14th—*S. anomala*, rare, at rest and at sugar. 15th—*A. tragopogonis* at rest. 23rd —*E. nigra* not uncommon; *H. micacea* at sugar. 29th—*H. protea* at rest and at sugar. September 4th—First *A. litura* and *C. trapezina*, both very scarce this year. 7th—*H. urticæ*, larvæ abundant on nettles. 9th—First *A. agathina* and *N. neglecta*, both very scarce. 12th—*P. chi* at rest. This moth usually swarms here; this year I only observed one specimen. *C. vetusta* at sugar. 13th—*C. exoleta* rare. 23rd —First *A. aprilina* and *P. meticulosa*.—Geo. Norman, Cluny Hill, Forres, N.B.: *October*, 1872.

*Description of the larva, &c., of Ephestia artemisiella.*—My friend, Mr. D'Orville, has for some years cultivated various plants in his garden with the sole object of attracting *Lepidoptera*, either in the imago or in the larva state, and with some considerable success. Amongst other species, *E. artemisiella* has been a more or less constant visitor, inducing at last the belief that it was bred in the garden, and lately, Mr. D'Orville has been able to prove this to be the fact, and now desires me to put together some account of his investigations.

The egg-state has not been observed,—but probably, the eggs are laid low down near the ground, on the tough woody *stalks near the roots of Artemisia absinthium*, as it is *here* generally, in old plants, that the larvæ are found to have made their entrance, and excavated mines or chambers for themselves, while feeding on the central substance of the root-stalks, much after the manner of some of the *Sesiidæ*.

In such situations, one might naturally suppose these larvæ would be more than usually free from molestation, but experience proves this not to be the case, as it happens that very few larvæ are so lucky as to escape an attack by a small prying ichneumon, their inveterate foe, *Lissonota hortorum*, Grav., specimens of which have been kindly identified by the Rev. T. A. Marshall.

On the 7th of December, 1871, many of the larvæ were found to be quite small, others more than half-grown, while some of the ichneumons had already formed their cocoons in the mines of their victims; indeed, towards the end of the month, one female ichneumon was bred, and during the months of March and the first week of April, 1872, Mr. D'Orville bred as many as seventeen of both sexes, and, had these been at large, no doubt they would have sought out a number of the remaining larvæ of *artemisiella* in which to deposit their eggs, thus causing their destruction both in autumn and in spring. In fact, both *artemisiella* and its parasite become full-fed in the larva state over a period of some latitude; but, while the ichneumon has also the same range for the appearance of the imago, *artemisiella* is, in that respect, more restricted, all the moths we bred (some fourteen in number) appearing between June 23rd and July 18th.

That we bred any moths seemed strange, for, although the root-stalks of wormwood were traversed in many directions by the mines of the larvæ, yet, on cutting some of them open, I found but one living larva amongst a host of ichneumon pupæ.

As the young larva of this species differs only in size from the adult, it will be sufficient to describe it when full-grown. At that time, when extended, its length is half an inch, very plump and fat-looking, cylindrical, and tapering from the third segment just a little towards the head, which is a trifle the smallest, the anal segment tapers suddenly and considerably, all the legs are short; the skin is smooth and without much gloss, excepting the head, the plate behind it, and one on the anal tip, which are very shining; the segments are tolerably well-defined at the divisions, the sub-divisions much more delicately; the sides are dimpled, and the spiracular region a little inflated.

In colour, it appears almost white, but in reality is a very pale faintly greyish flesh colour, with the slightest dorsal line of pale greyish-brown; the head is dark brownish-red, with the mouth blackish, the plate on the second segment is brownish-red in front, and very dark brown at the back, and is dorsally divided by a line of the pale flesh colour of the body; the ocellated spot on the sides of the third and of the twelfth segments is a ring of pale greyish-brown, with the whitish ground colour in the centre; the very minute tubercular dots are pale grey-brown, and a fine pointed hair of the same colour proceeds from each of them; the plate on the anal tip is of the same greyish-brown tint as the anterior legs, the ventral legs being tipped with dark brown hooks.

The pupa is about three-eighths of an inch in length and somewhat slender, the wing cases long in proportion; it is of a light reddish-brown colour, sometimes rather dark brown, and shining; it is enclosed in a whitish silken cocoon, and attached by the tail to a little pad of silk; the cocoon is spun amongst gnawings and frass held together with a mixture of silk of a tough consistence, and quite filling the mine above and below; the head of the pupa is from a quarter to half-an inch from the entrance, and the extent of the mine or chamber below the pupa is generally about five-eighths of an inch in length.

The ichneumon case or cocoon is found in a part of the excavation not far from the entrance, where it seems exactly to fit the hollow in which it reposes; it is five lines long, slender and cylindrical, and rounded at each end. Soon after its formation, it is of a pale mahogany-brown colour, highly polished and semi-transparent, so that the unchanged whitish grub within can be partially seen through; but after a few days its occupant becomes invisible, as the case either loses its transparency, or the colour of the pupa then assimilates with the case, which retains its colour to the last: the perfect ichneumon makes a circular hole on the side of the case, near the top, for its exit.—William Buckler, Emsworth: *September*, 1872.

*On the larva of Depressaria depressella.*—During the last few days I have been breeding *D. depressella* from larvæ obtained the beginning of August from the umbels of wild-carrot. The umbels seldom contained less than two and never more than five larvæ, but, though they feed close together, they could scarcely be called gregarious, as each spun its own web or tubular chamber.

Though all had the raised enamelled spots, they differed much in the ground colour, and I described three distinct forms:—1st, a pale transparent green; 2nd, a yellowish red-brown (as the figure in Nat. Hist. Tin., vol. vi); 3rd, a deep green (as deep as the larva of *Homœosoma senecionis*).

These three varieties were kept apart, and spun their cocoons without appreciably altering their respective colours.

In the perfect state I see no difference in the specimens. I did not at the time notice whether the different coloured larvæ frequented the same individual plants.—Sydney Webb, Redstone Manor, Red Hill: *August 29th*, 1872.

*On the oviposition of Pterophorus pentadactylus, L., in confinement.*—At eleven o'clock in the evening of the 18th July last, a "Plume," which Mr. Stainton has kindly determined as above, came to my lamp, and at last settled on the book I was reading. After being confined for a few minutes under a glass bell on the mantelpiece, it laid, at intervals of a few seconds, eleven minute, oval, white, semi-opaque ova. The next morning I found it lying dead on the eggs, which were loosely scattered about. Mr. Stainton having informed me that the larva eats leaves of *Convolvulus arvensis* in May, I conclude that the "Plume" was attracted by two pots planted with an exotic *Convolvulus*, and standing in the immediate vicinity of the window through which it made its entrance.—Albert Müller, Norwood: *August*, 1872.

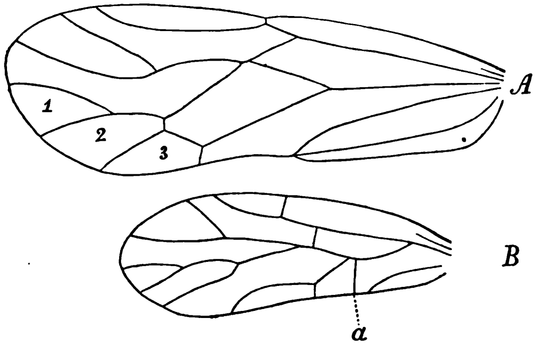
# NOTES ON TWO NEW GENERA OF *PSOCIDÆ*.

BY BARON E. DE SELYS-LONGCHAMPS.

Last year, in preparing for the 'Société entomologique de Belgique' a revision of the 'Psocides' described by Rambur (a paper not yet published), I noticed two genera (or sub-genera) which were not included among the twenty-one genera characterized by Dr. Hagen in his 'Psocinorum Synopsis synonymica' in 1866. I communicated the types of these to my friend, Mr. McLachlan, not having absolute confidence in my own eyes concerning the existence, or non-existence, of the third tarsal joint in some *Psocidæ*. He agreed with my opinion, and, in an article published in the 'Entom. Monthly Magazine' for September last, he notices (Notes 3 and 4, p. 77) the two new forms which I had sent to him, but, from motives of delicacy, refrained from giving them names. However, the few words he gave suffice to establish their diagnosis. It remains then to make known the names which I assign to these new forms, and to give drawings of the neuration of the wings; for, as Mr. McLachlan has said, it is very desirable that such drawings should be published, because we know by experience how difficult it is for a student, commencing his studies of the *Psocidæ*, to follow descriptions of the peculiarities presented by neuration, without the aid of figures.

## PSYLLIPSOCUS, *n. g.*

*Alarum anticarum characteres fere ut in Cæcilio Elipscocoque; sed vena furcata ramulam ("a" in fig.), cellulam marginalem superadditam, cellulæ ellipticali ad marginem interiorem basin propius conjunctam formantem, ante furcam primariam infernè emittit. Tarsi, ut in Elipscoco, triarticulati.*



A. Fore-wing of *Hemipsocus;* 1, 2, 3, the marginal cells.
B. Fore-wing of *Psyllipsocus;* *a*, the additional branch of the vena furcata.

### P. Ramburii, Selys.

*Psocus pedicularius*, Ramb., Névrop., p. 323 (*excl. syn.*).

Dr. Rambur indicates this insect as found at Paris in houses. The type, now in my collection, is in bad condition, which renders it still more necessary that a drawing of the neuration should be given. Rambur was mistaken in considering this species identical with the *pedicularius* of Linné, &c. (= *binotatus*, Rambur). It is therefore necessary to give it a new name, and I cannot do better than dedicate it to that observant entomologist. It is probable that *P. Ramburii* is exotic, imported into Paris with plants or merchandize. Rambur having no doubt described the insect from living or fresh examples, it is useful to reproduce his description in order to facilitate new researches :—

"De la grandeur du *binotatus*, mais ayant les ailes beaucoup plus "grandes. Corps d'un verdâtre obscur, surtout en dessus. Bouche "très-pâle ; antennes beaucoup moins longues que l'insecte avec "ses ailes, pâles, legèrement velues ; yeux saillaints, noirs. Pieds "pâles. Ailes grandes, tout à fait transparentes, ayant les nervures "fines." (The description of the neuration is not here reproduced, because the terminology does not accord with that now in use. It suffices to say that Rambur was perfectly aware that the nervures are disposed differently to those of other species, and that his description of them agrees entirely with the type in his collection).

### HEMIPSOCUS, *n. g.*

*Alarum anticarum characteres ut in Psoco (sensû stricto), sed cellulæ marginales tres solum (nec quatuor) adsunt. Tarsi, ut in Psoco Peripsocoque, bi-articulati.*

*A Peripsoco cellulâ discoidali occlusâ, cellulisque tribus marginalibus, discedit.*

### H. chloroticus, Hagen,

*Psocus chloroticus*, Hag., Verh. zool-bot. Gesellschaft Wien, 1858, p. 474 ; 1859, p, 200.

Sent from Ceylon by Nietner.

Liège : *October*, 1872.

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## DESCRIPTION OF A NEW SPECIES OF *PAPILIO* FROM LAGOS.

BY W. C. HEWITSON, F.L.S.

### Papilio Kirbyi, *sp. n.*

*Upper-side* dark brown. Both wings crossed by a central narrow *equal band of white*, commencing near the apex of the anterior wing, where it is straight, by an isolated spot and ending near the middle of the inner margin of the posterior wing, where it is curved. Posterior wing with a long tail, white at the point: a sub-marginal series of indistinct white linear spots.

*Under-side* as above, except that there is a small carmine spot marked with black within the cell, a second spot of the same colour below this, and a lunular carmine spot bordered above with white at the end of the central band of white.

Exp. 3½ inches.

*Hab.* : Lagos.

This species has been kindly presented to my collection by Mr. Semper, of Altona. It cannot be compared to any known species. Although dissenting altogether from much of the detail of his book, I have named it after Mr. Kirby, the author of a "Synonymic Catalogue of Diurnal Lepidoptera," in admiration of the great accuracy which is displayed in its production, and in gratitude for the many weary hours of research he has spared to me by the labour he has bestowed upon it.

Oatlands, Weybridge: *November*, 1872.

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## DESCRIPTIONS OF NEW SPECIES OF AFRICAN DIURNAL *LEPIDOPTERA.*

BY CHRISTOPHER WARD, F.L.S.

Dr. Boisduval, in his 'Faune Entomologique de Madagascar,' describes (page 30) and figures (plate 6) what he considers to be the male and female of *Acræa Ranavolana.* I have recently received specimens taken *in copulâ* of the species figured as the ♂ with a ♀ in no way differing, and of the ♀ with a ♂ only differing in being rather smaller; the latter must therefore be considered as a distinct species, which I propose to name

### ACRÆA MANANDAZA, *n. s.*

♂. *Upper-side:* fore-wing transparent, suffused with carmine, darkest at the base and outer margin: hind-wing powdered with white, the outer margin bordered with carmine, with six clearly defined oval black spots, edged outwardly with red, the upper and lowest the smallest; curving from the centre of the anterior margin to the centre of hind margin, an irregular band of nine black spots; near the base a cluster of six small black spots.

*Under-side:* the same as upper-side, but wanting the white powdering.

♀. Colouring and markings the same as ♂.

*Expanse,* ♂ 2 inches, ♀ 2¼ inches. Habitat, Madagascar.

### EURYTELA NARINDA, *n. s.*

♂. *Upper-side:* rich dark brown, with a red band commencing narrowly below the apical angle of fore-wing, broadening downwards to anal angle, crossing and covering posterior half of hind-wing; the outer margin of the latter edged with dark brown, and within a narrow clear band of same colour.

*Under-side:* rufous-brown, with a narrow, irregular band of small, triangular, silver spots, connected by a line of darker brown, and following the outer margin of both wings; on the fore-wing, within this band, is a clear curved line of silver, continued nearly to the anal angle, the latter shaded with orange-yellow; the cell of the upper, and base and centre of lower, wing marked with numerous lunular and oval spots and striæ edged with silver.

Expanse, 2 inches. Habitat, Madagascar.

Allied to *Eurytela Dryope.*

### MYCALESIS ANTAHALA, *n. s.*

*Upper-side:* fore-wing brown, darkest at the anterior margin, a black ocellus surrounded with lighter brown, narrowly bordered with yellow, and with a small white eye. Hind-wing brown, outer margin slightly dentated and edged with dark brown, within three small ocelli, black bordered with yellow, and white eye.

*Under-side:* white, mingled with numerous small waved markings of brown: fore-wing with a small ocellus near apex, below a larger one surrounded with white: hind-wing with a broad band at outer margin, edged inwardly by a narrow line of brown, and containing six ocelli, one separate and touching the apex, below a series of five, which are confluent and continued to the anal angle, the upper and two lowest the smallest, all yellow with black centre and white eye, and bordered with brown; hind margin edged with a double line of brown.

Expanse, 2 inches. Habitat, Madagascar.

### DIADEMA USAMBARA, *n. s.*

*Upper-side:* fore-wing black, near the apex a broad oblique patch of white almost crossing the wing, below this a small white spot; from the cell to the hinder margin broadly marked with white suffused with greyish-blue, darkest towards the outer margin, the nervures crossing are strongly marked with black: hind-wing white, clouded with grey at inner margin, outer margin with a clear band of black continued round to anal angle, and there containing a double red spot, nervures black.

*Under-side:* as above, but apex of fore-wing broadly marked with red, and outer margin of hind-wing bordered with red, edged outwardly by a black line containing numerous small white spots.

Expanse, 4 inches. Habitat, Ribé, East Africa.

This fine *Diadema* is allied to *D. Anthedon.*

(*To be continued*).

## EXTRAORDINARY MIGRATION OF *PYRAMEIS CARDUI.*

BY F. BUCHANAN WHITE, M.D.

My friend, Colonel Drummond Hay, of Seggieden, Perthshire, has furnished me with the following account of a great flight of *Pyrameis cardui* that he once witnessed, which I think should be recorded.

"It was, as far as I recollect, in the early part of the summer of " 1842, while stationed in Vido, a small island in the harbour of Corfu, " that an extraordinary flight of the Painted Lady Butterfly took " place. The first part of the column reached the island about 9 " o'clock in the morning, and continued steadily to advance in rolling " masses of many thousands for upwards of three hours. Though the " density of the column was at no time very great, yet it appeared to " extend in breadth as far as one could see, having the appearance " of black drifting snow, if I may so call it. By one o'clock the " flight had completely passed: the wind at the time was blowing fresh " from the south-east. In the afternoon, on sailing up the channel of " Corfu, the traces of the passage of the flight were very evident, from " the quantities of dead butterflies which floated on the surface of the " water; and, for days afterwards, they were to be seen drifting into " the various bays in the island of Corfu. I did not hear whether " this flight had been observed on the Continent; but, as they ap- " peared to be taking the direction of the coast of Italy, they would, " in all probability, strike the land in the vicinity of Otranto."

Perth: *October*, 1872.

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## NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 3).

BY F. BATES.

### POLPOGENIA RIMOSA, *sp. n.*

Oblong-ovate, brown, with a slightly russet tinge; entirely encrusted with a granulous exudation, protruding through which may, under a strong power, be seen short, erect, stiff hairs, which at the sides of the prothorax and on the legs assume the character of pubescence; mandibles dilated, strongly keeled at the sides and excavated on each side of the keel, the upper excavation deep and broad; mentum broad, sub-angular at the sides, widely and angularly notched in front; labrum prominent, emarginate in front and ciliate, finely tuberculate, hairy; epistoma short, broadly emarginate in front, the suture separating it from the front represented by a linear depression which also extends backwards to the eyes, rapidly widening from the front backwards to the antennary orbits; the latter somewhat depressed above, very gradually rounded (from the point of junction with the epistoma) *to the eyes*, so that they appear almost continuous with the epistoma, the point of junction of the two forming a very widely open angle; antennæ short, compact, 3rd joint sub-cylindrical or slightly obconical, joints 4—8 sub-equal, sub-moniliform, 9 a little larger and sub-obconical, 10 longer than 9, cylindrical, truncated at apex, 11 very short, transversely conical (or triangular), apex pointed; head imbedded in the prothorax up to the hind margin of the eyes, less gradually sloping in front than in *P. asidioides*, very finely tuberculated (the tubercles nearly hidden by the incrustation above mentioned); prothorax of the same form as in *P. asidioides*, the anterior angles distinct, finely tuberculated in the middle, much more strongly on the sides; elytra oblong-oval, squarely truncated and scarcely wider at the base than the base of the prothorax, humeral angles indistinct, regularly convex (*i. e.*, not perceptibly depressed on the back), the epipleuræ rounded (*i. e.*, not marked off from the sides by a keel-like costa), abruptly declivous behind, entirely and more or less strongly covered with irregular, transverse flexuous elevations, which are much broken up, giving an irregularly nodose or tuberculated appearance, the spaces between these elevations appearing irregularly foveated or slightly rimose; there are also apparent on each elytra four slightly elevated, interrupted costæ; situate on the top of these elevations (but more especially on those forming the costæ) are clusters of small, black, conical tubercles, and from each of these, as well as from those on the head and prothorax, arises a strong, pitchy, bristle-like hair, directed backwards; legs comparatively short, pubescent, bristly; anterior tibiæ slightly more triangular than in *P. asidioides*, the apex at the outer side sub-dentiform, the spurs very long and stout; the four hind tibiæ quadrangular; prosternal process more prominent than in *P. asidioides*, the mesosternum sub-horizontal and abutting to the prosternal process; epipleural fold somewhat broader behind than in *P. asidioides*; tarsi short, robust, the joints contracted.

Long. 5¾ lin.

*Hab.*: Niger; one example.

Taking the typical species, *Polpogenia* appears to differ from *Pterolasia* in having the mentum much broader, sub-angular at the sides, and strongly angularly notched in front; the labrum larger, more prominent, emarginate in front and without the transverse elevated line near the anterior border; the anterior angle of the prothorax distinct; the anterior tibiæ basally more robust, the outer apical angle more dentiform and the spurs longer and more robust; the prosternal process narrower, less expanded near the mesosternum, and curved round the coxæ; the outer joints (especially) of the antennæ differently formed; and the antennary orbits less prominent, less distinctly marked off from the epistoma and appearing almost continuous with it. The figures given by Solier (Tome 5, pl. iii, D, 17, and pl. iv, A, 4) are incorrect in this latter respect. In *Pterolasia* it will be found—when the head is looked at from the front—that the antennary orbits are prominent and abruptly rounded in front, so that the angle formed at the point of junction with the epistoma is considerably less open than in *Polpogenia*.

In the present species, the space between the sides of the mentum and the mandibles is somewhat wider, and the apical notch shallower, than in *asidioides;* the antennæ more nearly approach those of *Pterolasia* than *Polpogenia*, but joints 4—9, being shorter and stouter, appear sub-moniliform, and joint 9 is shorter instead of (as in *Pterolasia*) longer than 10. In the short, compact, cylindrical tarsi it differs from both *Polypogenia* and *Pterolasia*, agreeing, in this respect, more nearly with *Pachyscelis.*

## MESOTRETIS, *nov. gen.* (*Ulomides*, Lac.).

Mentum trapezoidal, convex down the median line; last joint of labial palpi elongate-oval; the apex slightly obliquely truncated; that of the maxillary large, moderately securiform; mandibles bifid at the extremity; labrum transverse, emarginate in front; epistoma bent down in front, rapidly widened behind, arcuate-emarginate anteriorly, the fore angles rounded, the suture indistinct; antennary orbits small, not prominent, oblique; eyes large, prominent, free, lateral, entire, slightly transverse; antennæ longer than in *Tribolium* or *Phtora,* having a tri-articulate club, joint 3 longer than 2 or 4, 4—8 sub-equal or very gradually wider, 9 and 10 much larger and wider, sub-triangular, 11 large, sub-globular; prothorax wider than long, widest before the middle, thence slightly contracted to the base, anterior angles rounded, slightly arcuately emarginate at apex, the base slightly sinuously rounded, hind angles forming obtuse angles, finely margined at the base and for one-third at each side of the apex, the sides more strongly margined; scutellum large, rounded behind; elytra elongate, very gradually widened to beyond the middle, apex rounded, base slightly arcuately emarginate, wider than the prothorax at its base, shoulders somewhat prominent, humeral angle rounded, sides margined, epipleural fold complete behind, nearly as broad at apex as at the middle; prosternal process gradually expanding behind, the end broadly truncated: mesosternum strongly declivous; middle coxæ closely enclosed by the meso- and metasterna, the latter normal; femora compressed, elongate-oval, attenuate at base; tibiæ sub-linear, outer margin entire, outer apical angle not prominent; *tarsi dilated, pulvillate beneath, the penultimate joint sub-bilobed;* inter-coxal process narrowly rounded at apex.

A remarkable species, which, by the form, &c., of its tarsi, stands in the same relation to the *Triboliides* that *Alegoria* does to the *true Ulomides*, and should form a new "groupe" in the tribe; but, as these secondary groups are already numerous, I propose placing the present genus with the *Triboliides*, and *Alegoria* with the "*Ulomides vraies;*" the form of the head, mentum, antennæ, tibiæ, &c., will lend themselves to this arrangement; and, really, *Mesotretis* only differs from the *Triboliides*, and *Alegoria* from the *true Ulomides*, by the structure of the tarsi.

M. FERRUGINEA, *sp. n.*

Elongate, moderately convex; sub-nitid, yellowish ferruginous, with the suture and extremities of thorax dusky, and two spots on the head, at each side the front, black; entirely and rather evenly, but not closely, punctured; prosternal process strongly rugose-punctate, the punctures between the coxæ very elongate; flanks of prothorax and sterna closely and somewhat coarsely punctured, rest of the underside finely and sparsely punctate; abdominal joints rugulose at the base.

Long. 1¾—2 lin.

*Hab.*: Australia (King George's Sound); two examples.

Leicester: *November*, 1872.

## DESCRIPTION OF A NEW GENUS AND SPECIES OF *HYDROPHILIDÆ* FROM NEW ZEALAND, AND OF A NEW SPECIES OF *PHILHYDRUS* FROM GREAT BRITAIN.

BY D. SHARP, M.B.

### CYLOMA,* *nov. gen. Hydrophilidarum.*

*Corpus ovatum, convexum; prothorace antrorsum angustato.*
*Antennæ 8-articulatæ.*
*Palpi maxillares articulo 2º incrassato.*
*Tarsi posteriores articulo primo quam 2º breviore.*

Of the general form and appearance of a small *Cyclonotum*, but differing from that genus by the short basal joint of the hind tarsus. Maxillary palpi formed as in *Cercyon*. Antennæ 8-jointed; 1st joint elongate and slender, 2nd about as stout as first, but less than half as long, 3rd thinner than 2nd, and not quite so long, 4th joint small, scarcely broader than 3rd, about as long as broad, 5th joint very short and transverse, intermediate in width between the 4th and 6th; joints 6—8 form an elongate club. Hind tarsi short, about half as long as the tibiæ, basal joint shorter than 2nd, 3rd also shorter than 2nd, about as long as the 1st, 4th shorter than 3rd, 5th joint rather longer than 2nd. Claws small. Mesosternum visible between the middle legs as a small quadrangular or diamond-shaped plate, the front angle of which is prominent, and forms the lower part of a perpendicular carina.

The insect for which this genus is founded is of considerable interest, as it completes the connection between the *Sphæridiini* (*Geophilides*, Muls.) and the *Hydrophilini*. Though certainly belonging to the *Sphæridiini*, it possesses the short basal joint of the hind tarsus characteristic of the *Hydrophilini*. Its place is at the commencement of the *Sphæridiini*.

C. LAWSONUS, *sp. n.* *Niger, nitidus, antennarum stipite palpisque testaceis, pedibus piceis; corpore suprà crebre evidenter punctato, elytris striato-punctatis, striis internis basi desinentibus.*

*Hab.: Nov. Zeal.* *Long. corp.* 1⅔ *lin.; lat.* 1 *lin.*

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* A word without any classical derivation.—D. S.

I have received a single specimen of this very interesting insect from Mr. R. Lawson, of Scarborough; his brother captured it in the neighbourhood of Auckland, New Zealand.

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Some two or three years ago, at a time when I was studying my British *Philhydrida*, I separated my specimens of *Philhydrus marginellus* into two apparently distinct species (besides *P. ovalis*, Th.). I did not, however, venture to call attention to this at the time, the material in my possession not being sufficient to justify me in coming to any positive conclusion. I have since, however, paid attention to the point, and hope I am right in announcing that the common *Philhydrus marginellus* of our collections must be considered as an undescribed species. I give below a description of it. I shall not here attempt to enter into the synonymy of *P. marginellus* and its allies, for it is of the most complicated and difficult character, and it must be left to a monographer of the genus to deal with it in a complete and satisfactory manner. I may, nevertheless, state that I think it will probably be found, that *P. ovalis*, Th., must bear the name of *marginellus;* and that *marginellus*, Th., is pretty certainly the *H. affinis* of Gyllenhal, and probably of Paykull, and will have to bear that name. I have also a fourth closely allied species, which I captured in abundance in the Asturias, and which I propose to describe under the name of *P. nigritus*.

PHILHYDRUS SUTURALIS, *sp. n.*

*Oblongo-ovalis, crebre punctatus, niger, prothorace elytrisque livide testaceis, illo disco infuscato, his suturâ nigrâ; clypeo utrinque maculâ laterali, palpis, antennarum basi tarsisque testaceis; tibiis piceis.*

*Long.* 1¾ *lin.*

*Var. palpis maxillaribus articulo secundo (interdumque quarto medio), leviter infuscato.*

Palpi yellow (occasionally with the second joint and the middle of the last one a little clouded). Head black, with a distinct yellow spot on each side of the clypeus in front of the eye. Thorax yellowish, with the central part always much infuscate. Elytra yellowish, with the suture distinctly black. Tibiæ pitchy, tarsi yellowish.

Closely allied to *P. marginellus*, Th., but larger, the palpi yellow, the clypeus spotted and the punctuation of the upper surface slightly less marked.

Common both in England and Scotland.

Obs. In *P. marginellus*, Th., the elytra are of a browner colour, the thorax is darker, the head black and unspotted, and the last joint of the palpi black. *P. ovalis*, Th., is black, with the sides of the thorax and elytra yellowish, the palpi yellow, and the head unspotted.

Thornhill, Dumfries: *October*, 1872.

***Observations on some British species of Dascillidæ, with description of a new species of Cyphon.***—For some years past, I have diligently collected the species of *Cyphon* and the allied genera, and have thus accumulated a large mass of material in this very difficult and little attractive group. I have lately submitted this material to examination, and I give these observations as the result. The works that I have made use of for the purpose are chiefly those of Kiesenwetter, Thomson, and Tournier

1. HELODES BOHEMANNI, Mann. It has been suggested by Mulsant and Crotch that this is not a good species; but, on the other hand, Tournier accepts and maintains it, in which view I feel convinced that he is wrong. I have two specimens which I have no doubt are to be referred to *Bohemanni*, and I am quite convinced they are only a variety of *livida*. The characters given by Tournier do not accord very satisfactorily with those given by Thomson. The Swedish author, after mentioning one or two slight characters to differentiate *Bohemanni* from *livida*, adds the words "*tantum distincta;*" so that it would appear he has not much confidence in the species. Tournier maintains the species chiefly because of a difference in the thorax, and of the abdominal foveæ in the male. The development and form of the thorax I find, however, to be remarkably inconstant in both *H. livida* and *H. minuta;* and, as regards the abdominal foveæ, one has only to look at the plate in which these are represented by Tournier to be astonished that he should have attached much importance to so slight a difference in insects with such soft and pliable covering. I may add that my specimens of *H. livida* do not agree with the figure of either *livida* or *Bohemanni* as given by Tournier; so that if *Bohemanni* be maintained, our British specimens would have to be manufactured probably into a new species.

2. CYPHON NITIDULUS, Thoms. This species has been discriminated by Thomson from the *coarctatus* of the older authors, chiefly on account of a coarser and more distant punctuation of the elytra; but many specimens come very close to *C. coarctatus*. According to my experience, *C. nitidulus* is much commoner than *coarctatus*.

3. C. FUSCICORNIS, Thoms. Kiesenwetter has recorded that he has observed this insect coupled with *coarctatus*, and considers it the female of that species; though I have not observed the insects *in cop.*, I have, from the distribution and resemblance of the two, no doubt that his deduction is as correct as his observation.

4. C. PALLIDIVENTRIS, Thoms. The only characters of importance that distinguish this insect from *C. nitidulus* are just those that distinguish *fuscicornis* from *coarctatus;* and it, therefore, becomes highly probable, that, as *fuscicornis* = ♀ *coarctatus*, so *pallidiventris* = ♀ *nitidulus*. I have met with the two latter very often, and have reason to believe that this probability is a certainty.

5. C. VARIABILIS, Thoms. This is a most variable species in size, colour, form, and sculpture; and the *nigriceps* of Thomson and Kiesenwetter are, I believe, only varieties of it. I have distributed among my correspondents (under the M.S. name of *pallidiceps*) an insect appearing very different from ordinary *variabilis*,

but I am now convinced that this also is only a variety of that species. Small specimens of *variabilis* approach extremely closely to large *padi*, but I believe, nevertheless, the latter is really a distinct species.

6. C. PALLIDULUS, Boh. This insect comes so close to certain varieties of *variabilis*, that it is sometimes only to be distinguished by an examination of the under-side; it is then to be remarked, that, whereas *variabilis* has a very dense and fine punctuation and pubescence on the under-side of the hind-body, these are so much more scanty in *pallidulus* as to leave little doubt of its specific distinctness. This character to distinguish the two species can scarcely be considered as expressed by Tournier, who says of *variabilis*, " under-side of the body finely and densely punctured," and of *pallidulus*, " abdomen densely punctured." I cannot therefore feel certain that Tournier's *pallidulus* is really distinct from *variabilis*. In conclusion, I may mention that Mr. Waterhouse has proposed to call this insect *C. ochraceus*, Steph. Stephens' few words of description under this head contain nothing inapplicable to *pallidulus*, but he adds, " much less than either of the other species," whereas, the very common *C. padi*, described by Stephens immediately above *ochraceus*, is always smaller than *pallidulus*. It will be well, therefore, to abandon the *ochraceus* of Stephens, as well as the six other species proposed by him in the genus.

7. C. PUNCTIPENNIS, *n. sp.* *Ovalis, convexus, sat nitidus, parcius brevissimeque pubescens; niger, prothorace, elytris pedibusque rufo-testaceis, antennis basi obscure rufescentibus: elytris basi fortiter minus crebre punctatis, suturâ haud infuscatâ; abdomine dense subtilissime punctulato.* *Long.* 1¼ *lin.*

*Var. elytris infuscatis, apice quam basin dilutioribus.*

Allied to *C. variabilis*, but shorter, broader, and more convex, and distinguished from all the varieties of that most variable species by its extremely short, fine and scanty pubescence; its elytra also are more sparingly punctured, with the punctuation at the base coarser than in any *C. variabilis*. The third joint of the antennæ is also rather shorter than is usual in *variabilis*. The sculpture and pubescence of the elytra are so markedly different from what obtains in any other of our species, that if attention be paid to them no mistake will be made in determining this insect.

This is the species intended to be referred to in my Catalogue by the name *nigriceps*, Th.; it appears, however, to be not the *nigriceps* either of Kiesenwetter or Thomson. Tournier (who received types from Kiesenwetter) states that the *nigriceps* of that author is only *variabilis;* and the *nigriceps* of Thomson is certainly not the species I am now describing, as Thomson says "*sutura postice infuscata,*" this being never the case in *punctipennis*.

*C. punctipennis* is rare, and has, I believe, been found only in Scotland, in two or three localities; I have taken it at Rannoch, and on the Keir Hills, Thornhill. It lives in moss in wet places on the moors, and is especially to be found among moss growing thickly with heather, and mixed with reindeer lichen. I have obtained a fine series by repeated searchings in the second of the above mentioned localities.—D. SHARP, Thornhill, Dumfries: Oct. 25th, 1872.

*Additions to the list of British Coleoptera, &c., including description of a new species of Thyamis.*

LITHOCHARIS PICEA, Kraatz, Ann. Soc. Ent. France, 1858, Bull. p. cxci.—Among some *Coleoptera* submitted to me for examination by Mr. G. C. Champion are a few examples of this well marked species, originally stated to occur near Paris, and of which I do not remember any subsequent record. These examples were taken late in the present autumn by Mr. Champion, when sifting dead leaves in Bexley Wood, Kent. The species, on account of its colour (dark pitchy, with rather lighter elytra, and ferruginous legs and antennæ, the latter of which have the six basal joints slightly infuscated), is readily distinguishable from all our recorded species; and, indeed, can only be compared with *L. rufiventris*, Nordm., not yet observed in this country, and from which it differs materially in the punctuation of the head. It is in the same section as *L. fuscula* and *brunnea*, being of the average size of the latter, from which it may be known, apart from the above mentioned characters, by its broader build, more slender antennæ, more finely and closely punctured head, more obsoletely punctured thorax, and much longer elytra. The ♂ appears to have the hind margin of the penultimate ventral segment entire.

MELIGETHES OCHROPUS, (Sturm) Erichson, Ins. Deutschl., iii, p. 180.—It may be remembered that this species has already been registered as British, but erroneously, as the specimens so recorded proved to be *M. brunnicornis*. I have now the satisfaction of adding *M. ochropus* to our list, without a doubt of its correctness, on the authority of two examples recently detected by myself amongst *M. difficilis* in Dr. Power's collection, taken by him in June and August, 1862, in the New Forest, Hants. I have also recently found a specimen among some unexamined beetles taken by myself during the past autumn: this one was from Claygate, Esher, where I found it with *brunnicornis* in September. The species is readily separable from its yellow-legged allies by its very broad and short oval form, strong convexity, and very widely and at the same time coarsely punctured elytra, on which the pubescence is extremely short, and by the outer margin of its posterior tibiæ not being rounded outwards, but dilated in a straight line until the lower third, where they are suddenly and obliquely contracted. The armature of the anterior tibiæ is as in *difficilis*, only not nearly so long or sharp.

It appears to occur on *Lamium album*.

MELIGETHES KUNZEI, Er., according to Reitter (Rev. der europ. Melig. Arten, p. 86), is only a var. of *difficilis*; but in this opinion I cannot agree, having taken (always on *Lamium album*) great numbers of the latter, exhibiting the usual degrees of small difference likely to occur in any species, but without ever finding amongst them anything approaching to *M. Kunzei*, which has only occurred to me by sporadic individuals, and which, from Mr. Champion's observations (p. 159), seems to occur on *Agraphis* or *Melampyrum*. Herr Reitter notices the greyish-white and extremely fine pubescence, very dark (almost purplish) black and shining surface (never with greenish metallic reflections on the thorax), lighter coloured legs and antennæ, and less strongly developed teeth at the apex of the anterior tibiæ of *M. Kunzei*; but he says nothing of its considerably wider punctuation (mentioned by Erichson). I observe, also, that it is comparatively a narrower insect than *difficilis*, with the outer edge of the posterior tibiæ, as in *ochropus*, not rounded outwards for its upper two-thirds, and the setæ of the middle and posterior tibiæ much thinner, shorter and lighter in colour. From a superficial view, it is easier to detect *M. Kunzei* than any of its allies.

MELIGETHES MARRUBII, Brisout, = *nanus*, Er., according to Reitter, *l. c.* p. 53, and is recorded as occurring on *Erysimum alliaria* and *Salix aurita*, as well as *Marrubium*. I have detected a third British specimen of this insect, in Dr. Power's collection, taken at Horsell, near Woking, and which is remarkable for its almost wholly bright yellow antennæ and legs.

MELIGETHES MUTABILIS, Rosenh., with which M. Brisout has identified my *M. pictus*, is itself, according to Herr Reitter, *l. c.* p. 124, a var. of *brevis*, Sturm, with which, however, I fail satisfactorily to reconcile my species.

NANOPHYES GRACILIS, Redtenbacher, Faun. Austr. p. 370 (2nd ed. p. 819).

I have much and unexpected pleasure in adding a companion to our hitherto solitary exponent of this genus, having taken a single example of the above named species near Esher in September last. It is of the size of medium specimens of the common *N. lythri*, from which it is instantly separable by all its femora having two small sharp spines on the under-side, between the middle and the apex, and of which the one nearer the apex is much the smallest. It is also readily distinguishable from *lythri* by its longer and thinner legs, antennæ and rostrum, its less evident pubescence, and broader and much less acuminate elytra, of which the interstices are flat. Although *lythri* is so variable in colour, I can find none to match this specimen, which has yellow legs, with the tips of the femora narrowly black, the club and most of the funiculus of the antennæ, the head, thorax, and an irregular basal patch (somewhat triangular in shape, and produced in the middle below the scutellum for quite the upper third of the elytra), also black. The rest of the elytra is reddish-yellow, with two very faintly indicated small darker spots on the 5th interstice, and another on the 3rd, near the apex. Beneath it is entirely black.

I know of no other but Redtenbacher's original record (1849),—only once taken near Vienna. De Marseul only quotes it from Germany; and Bach (Käf. Fauna, p. 386) vaguely says it is rare, and as yet only known in the South.

THYAMIS DISTINGUENDA, *sp. n.*

*Oblongus, apterus, capite cum thorace nitidis, elytris propter superficiem minute alutaceam nitidiusculis; ferrugineus, subtus obscurior, femoribus posticis ad apicem late, tarsorum articulo apicali, antennarumque articulis sex apicalibus plus minusve, nigro-piceis; thorace vel concolore vel rufo-fuscescente, crebre leviter, sæpe fere obsolete, punctulato; antennis validioribus, longitudine corpori fere æqualibus; elytris ad basin quam thorax evidenter latioribus, humeris sub-prominulis, suturâ anguste rufescente, sat profunde punctatis, punctis prope basin fere seriatim dispositis, angulo suturali obtusiusculo.*

♂ *abdominis segmento ventrali medio longitudinaliter lævigato-impresso, margine postico incrassato; tarsorum anticorum articulo basali intus apicem versùs triangulariter dilatato-producto. Long. corp.* 1—1¼ *lin.* (*Anglic.*).

*T. atricillæ, Gyll., affinis, maximisque ejus exemplis staturâ æqualis, at minus regulariter ovalis; antennis validioribus, ad basin evidenter sat abrupte dilutioribus,* *capite dilutiore cum thorace haud æneo-micantibus, elytrorum humeris comparatim sat prominulis, punctis plerumque (ac præcipue basin versus) seriatim dispositis, angulo suturali minus obtuso, tibiarum posticarum calcari multo longiori, tarsisque posticis longioribus, optime distinguenda.*

I have for some time had an example of this species, taken by myself at Mickleham, undetermined in my collection, as allied to *atricilla;* but it was not until recently, on seeing several specimens of it (taken by Mr. Champion, according to his recollection on *Senecio jacobæa*, at Box Hill, during September last), that I felt convinced of its separate specific value.

Of European species not recorded as British, it would seem in many characters to approach *T. crassicornis*, Foudras; but the entirely obsolete or absent thoracic punctuation of that insect, and the fact of Allard stating the joints of its antennæ to be more slender and longer than in *melanocephala*, render further comparison needless.

It seems nearest to *atricilla*, Gyll., differing from that common species, as above noted, in being of average rather larger size, without a dark brassy head and thorax, of less regularly oval outline, the greatest width being nearer the apex, with more perceptible shoulders to the elytra (of which the punctuation is rather stronger and in most of the specimens evidently disposed in striæ, especially towards the base, and the apical angle is not so rounded off, being scarcely more obtuse than in *melanocephala*), and with longer posterior tarsi, and a longer and stronger spur to the posterior tibiæ. The principal character, however, seems to be in the antennæ, which, for a *Thyamis*, are unusually stout, being in both sexes more so than in *atricilla*, and, indeed, than in any other of the genus known to me. The basal joint is as long as joints 2 and 3 together, and is considerably thickened and curved outwards towards the apex, joints 2 and 3 are short, 3 being rather the longer, 4 and 5 are sub-equal, each much longer than 3, and from thence to the apex the joints become gradually rather shorter and wider. The punctuation of the thorax, though very shallow and not clearly defined, is tolerably close, and in some examples almost confluent, the surface thereby becoming apparently slightly roughened, but there is a great latitude in this respect, as in others only traces of similar punctuation can be seen; in like manner the punctuation of the elytra is in some specimens more confused than in others, the tendency to striæ becoming thereby less perceptible.—E. C. Rye, 10, Lower Park Field, Putney, S.W.: *November*, 1872.

*Note on a recent capture of Lymexylon navale in Cheshire.*—I have been so fortunate as to capture five examples of the above species, hitherto somewhat doubtful as British, during the past season, at rest on the root end of a felled oak which was struck with lightning about four years ago, one side being destroyed. I found them all within a radius of eight inches, at four different times,—one on the 20th and two on the 27th of July, one on the 3rd and another in the latter end of August; this last specimen my friend, Mr. Sidebotham, had the pleasure of seeing alive.

Mr. Sidebotham and I visited the tree about the middle of August, and found what we believed to be the burrows of the *Lymexylon*, as we observed in them the exuviæ of beetle pupæ. Mr. Sidebotham has since, by digging into the wood of the tree, found a dead specimen, and also larvæ that are no doubt those of *Lymexylon*.—*Joseph Chappell*, 1, Naylar Street, Hulme, Manchester: *26th October*, 1872.

*Capture of Tachinus rufipennis in Yorkshire.*—On the 9th of April last, I beat out of a dead grouse, on a moor near Kettlewell, in Yorkshire, a single specimen of *Tachinus rufipennis*. It was named by Mr. Crotch, who has compared it for me with the first specimen recorded as British, from Mr. Wollaston's collection.—W. C. Marshall, Trinity College, Cambridge: *25th October*, 1872.

*Notes on Coleoptera at Caterham, Surrey.*—Having during the past year had occasional opportunities for an hour or two's collecting, on the chalk hills, &c., in the neighbourhood of Caterham, Surrey, I thought a few notes on the *Coleoptera* observed there by me would not be uninteresting to the readers of this Magazine. Several of the species taken, were for the first time seen alive by me, and a few new to my collection. The following list does not, I believe, by any means exhaust the locality, as most of my collecting, has been over the same ground, and even there each successive visit has invariably produced some species not previously seen. The majority of the better species only occurred singly, and several of my captures were evidently "flukes."

The following list include the better species met with, viz.:—*Panagæus 4-pustulatus*, in moss. *Oxypoda nigrina*, by sweeping. *Homalota hepatica*, once brushed from herbage at the side of a shady lane; *H. scapularis*, *intermedia* and *validiuscula*, by sweeping. *Mycetoporus brunneus*, *clavicornis* and *longulus*, by sweeping towards evening; *M. nanus*, in moss on a chalky bank, in winter. *Ocypus morio* (small form) and *similis*, in moss. *Staphylinus latebricola*, once in moss in a chalky hollow, in April; *S. stercorarius*, running about in the sunshine. *Stenus ater* and *fuscipes*, in moss. *Homalium pygmæum*, on the wing. *Pseudopsis*, brushed up. *Colon Zebei*, a fine ♂, brushed up towards evening, August 6th. *C. brunneum*, *Euthia plicata*, *Scydmænus denticornis*, *elongatulus*, and *Sparshalli*, by evening sweeping. *S. præteritus*, Rye, one specimen in moss with ants, April, and a second swept up in July. *Hydnobius strigosus*, a few specimens, by evening sweeping in July and August. *Anisotoma cinnamomea*, rarely, by evening sweeping; *A. grandis* (?), one very large ♂ specimen, swept towards evening from long grass and *Mercurialis* under some old beech trees, in August; *A. badia* (in moss), *dubia*, *ovalis*, *parvula* (occasionally), and, of course, *calcarata*, by evening sweeping. *Agaricophagus cephalotes*, a ♂ and ♀ swept up towards evening on two different occasions in September. *Cyrtusa pauxilla* (*minuta*, Wat. Cat.) and *Colenis dentipes*, by evening sweeping. *Saprinus virescens*, by sweeping on chalk downs. *Meligethes* is well represented in this district, as I have here found 23 of our 32 British species, the most noteworthy being *M. corvinus*, three specimens (Ent. Mo. Mag., ix, p. 37), taken by sweeping *Agraphis nutans* (wild hyacinth), *Melampyrum pratense*, &c., in a wood, in company with a few specimens each of *symphyti* and *Kunzei*, at the end of May; *M. difficilis*, *memnonius*, *brunnicornis*, *pedicularius*, *umbrosus*, *ovatus*, and *distinctus*, by promiscuous sweeping; *bidens*, off *Teucrium*, as usual; *serripes*, rarely, on *Echium vulgare*; *lugubris* (the larger form rare, the smaller tolerably common), by sweeping, also in moss in winter; and a ♀ specimen of a species probably distinct from *erythropus*, and in that case most likely *bidentatus*, Bris., by sweeping on the chalk. *Læmophlœus ferrugineus*, under bark of elm: this generally occurs with me in haystack refuse. *Phalacrus Humberti*, Tourn. *Olibrus millefolii*, *Antherophagus silaceus* (once) and *nigricornis*, by promiscuous sweeping. *Cryptophagus pubescens* and *setulosus*, *Atomaria ferruginea* and *fuscipes*, occasionally, by sweeping in a shady lane. *Syncalypta spinosa*, common in moss on the chalk in winter. *Aphodius obliteratus*, on the wing. *Drilus flavescens*, rarely. *Aspidophorus orbiculatus*, occasionally by sweeping. *Salpingus æratus*, Muls., a single specimen, by sweeping towards evening, in August. *Platytarsus setulosus* ("*Strophosomus hirtus*"), one specimen in moss (amongst primroses), in a hollow on the chalk hills, in April. *Orthochætes setiger*, in moss. One specimen of a *Smicronyx* (possibly true *pygmæus*), and *Tychius squamulatus*, *tomentosus*, and *curtus*, by sweeping on the chalk downs; *T. lineatulus*, Bris., common, on *Anthyllis vulneraria*, in June. *Gymnetron melanarium*, *Miarus campanulæ* (common), and *Orobitis cyaneus*, by promiscuous sweeping. *Ceuthorhynchus punctiger*, two or three specimens, in moss, and flowers, and by sweeping; *C. urticæ*, a dozen examples by continually working at the nettles (as at Mickleham, in company with swarms of *Cœliodes didymus*, but easily recognized in the net by its longer form, and when, feigning death, by its longer and more projecting rostrum), in May and June; *C. alliariæ*, on *Erysimum*, and *terminatus* by sweeping. *Baridius picicornis*, at its usual food plant. *Apion subulatum*, on *Lathyrus pratensis*; *A. atomarium*, *annulipes*, Wenck. (♀), probably swept off *Thymus* or *Origanum*; *A. filirostre* not rare, occurring sometimes in moss duriug winter. *Hylesinus oleiperda*, *Lamprosoma concolor* and *Cryptocephalus moræi*, by sweeping. *Crepidodera atropæ*, swarming, in early summer, on *Atropa belladonna*, the leaves of which it riddles to a large extent. *Cassida hemisphærica* and *nobilis* by sweeping.

Before concluding, I think it as well to mention, that there is one insect very common here on the chalk in August and September, and which I devoutedly wish was wholly absent, viz., *Leptus autumnalis* (too well known in the vernacular as "the harvest bug").—G. C. CHAMPION, 274, Walworth Road, London, S.: *5th October*, 1872.

*Occurrence near Dover of Syntomis Phegea, L., a genus and species new to Britain.*—A specimen of this insect was taken on the 24th June last near Dover by Mr. J. G. Batchelor. When first seen, it was flying very leisurely in the sunshine, and was easily captured.

I have great hopes that this conspicuous addition to our fauna will occur again in the same neighbourhood; having no doubt whatever, from the freshness of this specimen, which appeared to have just emerged from the pupa, that it had existed there in the larval state; indeed, I cannot conceive that it could have reached this country from the Continent in so perfect a condition, if at all,—and more especially so, as (according to continental authors) it does not appear to be found in any localities nearer to Britain than those departments of France which are nearest to Italy; and even there it seems to be quite local, though abundant where it is found.

The moth may be briefly characterized as follows:—Expanse of wings, 1½ in.: deep glossy blue-black, tips of antennæ white, abdomen with a crescent-shaped spot at base and band on 5th segment golden-yellow. Fore-wings with six white semi-hyaline spots, one basal, two (larger) sub-median, and three (smaller) sub-apical. Hind-wing with two similar spots, one basal, the other central.—N. E. BROWN, Brighton Road, Red Hill, Surrey, Surrey: *November*, 1872.

[*S. Phegea occurs at* Louvain, in Belgium, flying on the old ramparts in the *hottest sunshine* (*Ann. Ent.* Soc. Belg. I, p. 44).—EDS.]

*Argynnis Lathonia at Dover.*—On a slope of the downs near the Coastguard Station at the Zig-zag, Dover, on the 16th September, a young friend and I captured five perfect specimens of *A. Lathonia* in about two hours. Three days later we took a sixth on the same spot, but it was much damaged by the weather.—EDITH C. FOORD, Allinum Lodge, Bexley Heath, Kent: *November*, 1872.

*Vanessa Antiopa in Leicestershire.*—Since my notice of this insect occurring in Leicester, I have seen another specimen of it, caught in this county. The margins of the wings were chalky-white; and it was not in worse condition than might be expected from its having been knocked down and caught with a hat.—F. BATES, 15, Northampton Square, Leicester: 31*st October*, 1872.

*Vanessa Antiopa in Morayshire.*—It may be as well to record the occurrence of another specimen in this county. I received one yesterday from my friend, Dr. Gordon, of Burgie Castle. It was sent to me to be set, being still alive, and had been taken some time ago in the grounds at Burgie.

I am strongly of opinion that my friend, Mr. Doubleday, is correct in maintaining that the whole of the specimens recently taken in this country are native bred. The perfect lustre of their wings and the uninjured state of the body hairs are strong points of evidence against the "flown-over" theory.

I would, however, suggest the following as a solution of the mystery, supposing the insect is not permanently established in Britain:—

Hibernated specimens might easily be blown over from Scandinavia during the prevailing N.E. winds of the spring months: the females would lay their eggs on the sallows, and the perfect insects appear in August, without question, "true-born Britons."—G. NORMAN, Cluny Hill, Forres, N.B.: *October* 24*th*, 1872.

*Vanessa Antiopa in November.*—I shall, I dare say, add the last in date to the long list of captures of *V. Antiopa.* I have been watching for it here all the summer, but without success; and was, therefore, surprised to see and take one last Friday, November 1st, seated upon a piece of bare earth where some heath had been cut down. I must also add one more to the number of those who entirely disbelieve that this butterfly comes to us as a stranger; although, once when Mr. Hancock and I were crossing from Boulogne, we saw a specimen of it midway in the channel. —W. C. HEWITSON, Oatlands, Weybridge: 4*th November*, 1872.

*Crambus Verellus.*—When recently naming my *Crambites* for me, Mr. Howard Vaughan discovered an example of this species, which I find by my journal was caught by Master Melville A. Addison, in Beachborough Wood, Folkestone, during August, 1865. He was then quite a beginner; and, not caring for small things, allowed me to box the specimen from his net. It was flying on an oak-tree, and is in fine condition; and has escaped record before this time as it was named a few years ago by a well known entomologist as a variety of *pratellus.*—H. RAMSAY COX, West Dulwich: *November*, 1872.

*Cucullia absynthii in Somersetshire.*—My brother has just brought me some larvæ of this species, which he found on the coast of the Bristol Channel, near Minehead. I do not think they have been previously met with in the county.—ALFRED E. HUDD, Redland: *October 8th*, 1872.

*New locality for Cucullia asteris, &c.*—Having, accidentally, brought home a larva whilst collecting amongst golden-rod at Witherslack, which turns out to be *C. asteris*, Mr. Threlfall and I re-visited the locality in search of more, and brought home about 20 of them. Amongst them, I am in hopes (from the description Mr. Buckler gave me of the larva of *C. gnaphalii*) I have also fallen in with that. We also met with several larvæ of *Botys terrealis*, which, as well as the *C. asteris*, I have sent to Mr. Buckler for figuring. Moths were very scarce, the only things we cared to box were *Zelleria insignipennella*, *Gracilaria stigmatella* and *populetorum*, and *Thera firmata*.—J. B. HODGKINSON, 15, Spring Bank, Preston: *September* 16*th*, 1872.

*Captures of Lepidoptera near Fleetwood.*—My eager young friend, Mr. H. Threlfall, and I paid a visit to the banks of the Wyre, above Fleetwood, early in August. On the way from Cleveleys Station we took *Melanippe unangulata* and *Eupithecia subfulvata*, and, amongst some alder on the river bank, *Melanthia rubiginata* and var. *plumbata;* from an old hedge we dislodged *Emmelesia unifasciata* and two *Depressaria Douglasella;* on an extensive salt-marsh we took more than 100 *Eupœcilia Vectisana*, and some of *E. affinitana*, which look as if they were large pale females of *E. Vectisana*. Amongst *Aster tripolium*, *Bucculatrix maritima* abounded, both in the larva and pupa states, but, though I collected some hundreds, I have only bred about half-a-dozen specimens, though lots of ichneumons; we also took two or three specimens of a *Coleophora*, which I do not know: it may be *binotapennella*.

Re-visiting the locality a few days ago, we got a number of *Eupithecia* larvæ, and about 20 larvæ of *Emmelesia unifasciata;* these drop off the plant very easily, and it requires some care to collect them. The only moth we got worth boxing was *Depressaria rhodochrella;* the wind was so high that it blew everything away.—ID.

*Captures of Lepidoptera in the Isle of Sheppy in* 1872.—A few interesting species of *Lepidoptera* have fallen to my share during the past unfavourable season, of which the following are perhaps worthy of a short notice:—*Colias Hyale;* fairly common in lucerne fields, towards the end of August; it was much more plentiful than its congener *Edusa*, of which I only saw three or four specimens. *Acherontia Atropos;* a good many pupæ, found in digging up potatoes, and brought to me by labourers, &c. *Sphinx convolvuli*; two pupæ, brought along with those of *Atropos*, and found under similar circumstances. *Trochilium ichneumoniforme;* a pair on the cliffs. *Œnistis quadra;* a fine ♂ beaten out of an ash tree. *Spilosoma papyratia;* two or three at rest on hedge-banks, &c. *Ennomos fuscantaria;* one bred from larva found on ash, another at a gas-lamp. *Tephrosia laricaria;* one on a fence, in July. *Acidalia rusticata;* another solitary example, at rest, within twenty yards of the spot where one occurred last year: I searched in vain for more. *A. emutaria;* rather late in its appearance this season, none appearing until July 3rd, after which it was, luckily, by no means rare, and I secured a considerable number, by dint of hard work. Nearly all that I took occurred on the banks of one ditch near the shore, about 400 yards long; they began to fly about half an hour after sunset, and settled down on the grass and herbage as soon as it was quite dark, being then easily found with the aid of a lantern. This species is really very difficult to obtain in good condition, and is more active on the wing than any other *Acidalia* with which I am acquainted. *Eupithecia succenturiata;* one specimen, flying in the evening sunshine. *E. subumbrata;* this pretty little "pug" occurred very freely on rough, broken ground on the cliffs, flying actively in the afternoon and evening. *E. denotata, abbreviata,* and *coronata;* one of each at rest, in April. *Anticlea rubidata;* not rare, flying at dusk. *Leucania comma;* rare, at sugar. *Nonagria crassicornis;* a very light-coloured ♂, bred from a pupa found in a stem of *Typha latifolia. Hydrœcia nictitans* and *micacea;* settled on flowers of *Statice limonium* after dark, the former being very plentiful. *Xylophasia polyodon;* one black variety at sugar. *Mamestra abjecta;* a nice series at sugar, also rarely at rest. *Agrotis corticea;* common at sugar. *A. ravida;* rather common, by beating thatch, as before; also occasionally at sugar. *Xylina semibrunnea;* in spring and autumn, but very scarce this year. *Aglossa cuprealis;* rare, in outhouses. *Endotricha flammealis;* not uncommon in hedges. *Spilodes palealis;* one on the cliffs, in July, among *Daucus carota;* another very fine specimen in a lucerne field, at the end of August. *Scopula ferrugalis;* common, on ivy-bloom. *Eudorea angustea;* rare, at rest. *E. pallida;* common among grass on the cliffs. *Ephestia elutella;* freely, by beating a hay-stack. *Homœosoma senecionis;* a few on the cliffs: I saw traces of the larvæ in the flower-heads of the ragwort, but failed to rear any. *H. sinuella;* common in dry, grassy places. *Oncocera ahenella;* one on a lighted window. *Rhodophæa formosella;* rare, by beating, and at light. *R. tumidella;* one specimen on the cliffs. *Crambus inquinatellus* and *selasellus;* not rare in a salt-marsh. *Xylopoda pariana;* abundant, by beating thatch. *Agdistes Bennettii;* this curious insect was pretty common at the end of July, flying at dusk over *Statice limonium. Pterophorus ochrodactylus* and *acanthodactylus;* common among their respective food-plants, *Achillea millefolium* and *Ononis arvensis:* I was rather surprised to see a good many specimens of *acanthodactylus* on ivy-bloom in October.

I picked up a beautifully fresh and perfect fore-wing of *Geometra smaragdaria* in the dockyard; but, in spite of a long search, failed to find the remainder of the insect, whose career had no doubt been cut short by some hungry bat.—James J. Walker, 7, West Street, Blue Town, Sheerness: *November 6th,* 1872.

*A case of mimetic analogy among the British Geometræ.*—With the exception of the clear-winged moths of the genera *Macroglossa* and *Sesia,* the only case of mimicry hitherto recorded among the British *Lepidoptera,* is that of *Diaphora mendica,* ♀, which Mr. Wallace regards as a probable mimic of *Spilosoma menthrastri.* I am convinced that another case of mimicry occurs among our native *Geometræ,* the imitated form being *Asthena candidata,* and the mimic *Acidalia subsericeata.* The mimic will be found to fulfil all the necessary conditions. It is undistinguishable from *A. candidata* when on the wing: it is rarer than this insect, and flies at the same period of the year and in the same localities. That the two species are almost co-extensive in range may be seen by referring to Mr. H. Jenner-Fust's 'Tables of the Distribution of the British Lepidoptera.'

Finally, *A. candidata* has all the characteristics of a protected race, being of a most conspicuous white colour, and so abundant in individuals as to quite enliven our woods on evenings towards the end of May and beginning of June.—R. Meldola, Brentford: *October,* 1872.

*Rare Lepidoptera in the Isle of Man.*—Mr. Hodgkinson having, in the Oct. number of 'The Entomologist's Monthly Magazine,' mentioned my name in connection with certain *Lepidoptera* said to have been taken in the Isle of Man, I am reluctantly compelled to send a few lines in reply to his statement.

Unfortunately, I cannot find Mr. Gregson's letter in which he mentions the capture of *Agrotis spinifera*, but I feel convinced that he did not say he took it himself. I believe he said that it was captured by a resident in the Isle of Man in the autumn, after the collectors, who annually visit the island, had left. Mr. Hodgkinson says it was sent to me alive: this is certainly a mistake. I have no recollection of ever having seen the specimen, but Mr. Gregson said he did send it to me *unset*, and that I returned it to him without any remark. I never received this species from any of my continental friends; and, till very lately, it has been extremely rare. It inhabits Sicily and the South of Spain, and the larva has recently been found near Barcelona.

I remember seeing the specimen of *L. exigua*, but it was not alive; it was dry, and the thorax crushed.

I will give Mr. Gregson's own words about the capture of *Micra parva*, contained in a letter received from him last spring, but with no date:—

"The *Micra* was taken and pinned by my late friend, Mr. Potter, at Growdale, "Isle of Man. He never set an insect, but as I gave him pins, and shewed him how "I liked to have them pinned, he took great pleasure in capturing anything he saw "for me, this among the number; and I thought you would like to see it as it came "from his hands, rather than when it had been set after being dry. It was taken in "1870, after the end of June and before the end of August."—HENRY DOUBLEDAY, Epping: *October* 12*th*, 1872.

*Note on Crinodes Sommeri and Tarsolepis remicauda.*—In the Ent. Mo. Mag., and Ann. Nat. Hist., of last October, Mr. Butler rejects my opinion concerning the synonymy of the above named moths. It is, however, clear that, when he made the description of Mr. Cornthwaite's insect, Mr. Butler was totally unacquainted with Hübner's *Crino Sommeri*, and that it was only after the publication of my synonymical note that he compared his new (?) species with Hübner's figures, and endeavoured to find some differences to justify him in retaining his names. If this be not so, why did he not mention this (to say the least) very similar moth, and add the supposed generic and specific differences to the description of his supposed new species?

Mr. Butler considers *Crino Besckei* as the type of the genus *Crino*, because that species is figured before *C. Sommeri*. But, if attention be given to the characters ascribed by Hübner ("Verzeichniss bekannter Schmetterlinge," p. 216) to this genus ("Die Schwingen blasssenig, dunkelstriemig, und mit glänzend weissen Flecken geziert"), it is evident that he really had in view the species called by him *C. Sommeri*, and that these characters apply, without any modification, to *Tarsolepis remicauda*, Butler. As regards *C. Besckei*, it is clear that Hübner was not attached to the so-called "type-system;" and, consequently, we have nothing to do here with the last-named species. I am, therefore, still of opinion that *Tarsolepis remicauda*, *Butler, ought without* doubt to be transferred to the genus *Crino*, Hübner, = *Crinodes, Herrich-Schäffer.*

Although Mr. Butler believes that Hübner's figure is intended to represent a male insect, as possessing a well developed anal tuft of radiating scales (this character, however, occurs also in the Javanese females, and is, therefore, without value), I rather believe it to be meant for a female, on account of the feebly pectinated antennæ. The anal tuft, as it entirely covers the sexual organs, may have been the cause of Hübner's mistake. In such cases, only an examination of the retinaculum can furnish positive evidence of the sex of the individual.

The want of the two long tufts of carmine hairs at the base of the abdomen most probably must be ascribed to the sex, such tufts being apparently confined (at this moment I do not recollect an instance to the contrary) to the male insect. They are often totally hidden; and this, probably, is the case with the male in Mr. Snellen's collection.

As for the length of the palpi, I notice that the females examined by me agree in this respect with Hübner's figures, and that Mr. Snellen's specimen (♂) holds an intermediate position between Hübner's and Butler's insects.

I think, also, no value can be attached to the size of the abdomen or to its spinous processes as figured by Hübner;—the former depending chiefly upon sex or desiccation, and the latter, formed by some diverging long scales on the sides of the abdomen, occurring also in Mr. Snellen's male. Moreover, I fail to understand how Mr. Butler can regard these processes as a *generic* difference, seeing that there is nothing visible of this character in the representation of *Crino Beschei*, the species which, according to him, should be the type of the genus *Crino.*

The specific differences summed up by Mr. Butler must certainly be ascribed for the most part to inaccuracies of the draughtsman. In order to prove this, it may be sufficient to fix the attention upon the inner margin of the front wings in both of Hübner's figures, which is waved only in fig. 1, and also upon the hind-wings in the same figure, which are unlike one another. Moreover, Hübner's figures are entirely too dark in colour, and have almost all the markings (the pale basal patches excepted) too sharply defined, instead of the under-side of the wings only, as Mr. Butler states (as for the latter character, I rather incline to the contrary opinion).

In the specimens examined by me, the pale costal band does not totally extend to the apex and is broader than in Mr. Butler's figure, especially at the base of the wings; the central marginal line of the hind-wings is continued round the margin, but, on both the upper and under-sides, is converted into spots, as in Hübner's fig. 2; the transverse band of the front wings is strongly waved and not nearly parallel to the outer margin, and the fringe of all the wings is tolerably long.

For these reasons, I persist in my assertion that *Tarsolepis remicauda*, Butler, is identical, generically as well as specifically, with Hübner's *Crinodes Sommeri.*

I think it not *impossible* that *C. Sommeri* occurs also in the New World,* although I rather believe it to be so considered in error, as seems to be the case with *Hemeroblemma peropaca*, which, according to Hübner ("Zuträge zur Sammlung exotischer Schmetterlinge," No. 271, fig. 541 and 542), is found at Monte Video, but since that time has been sent over from Sumatra, Java, Ternate (coll. Royal Mus. Leyden); and Celebes (Mr. Snellen's coll.), and also with *Ophiusa magica*, received by Dr. Boisduval from Madagascar and Bengal ("Faune entomologique de Madagascar, Bourbon et Maurice: Lepidoptères," p. 100), and by the Leyden Museum, from Java, and not from Monte Video as stated by Hübner ("Zuträge, &c.," No. 268, figs. 535 and 536).—C. RITSEMA, Leyden: *November*, 1872.

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* I am informed (October 14th, 1872) by Mr. F. Walker, that at present he has no opportunity of inspecting the specimen from Rio Janeiro, mentioned in the "List of the Specimens of Lepidopterous Insects in the Collection of the British Museum," which is no longer in Mr. Fry's collection.—*C. R.*

*The larva of the Trichopterous genus Brachycentrus, and its case.*—For a long time we have been aware of the existence of curious *quadrangular* caddis-fly cases manufactured out of vegetable matters. A detailed account of several forms of these cases (with notes on the dead larvæ therein contained) was given by Hagen in the Stettiner entomologische Zeitung for 1864, pp. 113—115, and he concludes by hinting that they may belong to the genus *Brachycentrus*, the earlier stages of which were unknown. In 1865, in my 'Trichoptera Britannica,' I figured (pl. ii, fig. 34) a case of this kind, found by Mr. Parfitt near Exeter, in deep running water. In the No. of the Annals and Mag. Nat. Hist. for June, 1867, Mr. Eaton gave a description, with figures, of the empty pupa-skin of *Brachycentrus subnubilus*, but he possessed no information as to larva and case. I am now able to confirm Dr. Hagen's suspicions, that some, at least, of the quadrangular cases are the work of the larva of *Brachycentrus*. Mr. W. C. Boyd finds *B. subnubilus* abundantly at Cheshunt, and this spring he placed several batches of eggs, laid by captured females, in an aquarium. A few weeks afterwards he found numerous little caddis-worms crawling up the sides of the aquarium, apparently feeding upon *Confervæ*, and already there were indications that the cases they inhabited were *quadrangular* tubes. As time wore on, the cases became more decidedly four-sided, and he then supplied me with several examples, though they were still very small. The association of these cases with *Brachycentrus* is thus settled; but the matter ends here for the present, for during Mr. Boyd's temporary absence from home all disappeared, so that a description of the full-grown larva has yet to be made.

I have said that Dr. Hagen gives descriptions of several varieties of these cases, and I am cognizant of the fact that two forms exist in Britain, yet I only know of one British species of *Brachycentrus*. The case found by Mr. Parfitt no doubt pertains to *B. subnubilus*, for he took the insect commonly near Exeter. But, in August, 1866, I found in a wood near Scarborough, at a trickling spring sopped up by a thick growth of moss, several small coarsely-constructed 4-sided cases (amongst the moss), which I can scarcely believe to be made by the same species that formed the larger and more delicate Exeter case: neither was the locality one in which I should expect to find *B. subnubilus*. The history of these has therefore yet to be solved; and it may be possible that quadrangular cases are not confined to *Brachycentrus*.

There also remains a case in my collection found by Mr. Albert Müller in the Rhine at Basle, which is neither quadrangular nor cylindrical, a transverse section of it shewing two angular, and a third semi-circular, sides, though the materials and texture are similar to those of the Exeter case, and, I think, to Mr. Boyd's cases, allowing for the immature condition of these latter.—R. MCLACHLAN, Lewisham: *October 8th, 1872.*

# Obituary.

*Prof. Wesmael.*—Constantin Wesmael was born at Brussels in 1798, and died at St. Josse-ten-Noode (in Belgium) on the 25th October last. In him, Belgium has lost one of the most honoured of her now extensive band of Entomologists. His attention was principally devoted to *Hymenoptera*, and especially to the neglected parasitic families of that Order; but he also enriched entomological literature by memoirs on *Neuroptera*, *Coleoptera*, &c. Old age and infirmity had for some years prevented him from following his studies with the same energy as formerly, but there are few who have so disinterestedly devoted their lives to entomological pursuits, and to whose memory greater respect is due.

*Robert Smith Edleston.*—We have received information of the death, on 31st October last, of this gentleman, at his residence, Bowdon, Cheshire, at the age of 53 years, for the last 35 of which he had devoted his leisure to British Insects of all orders. His collection of British *Lepidoptera* is very extensive, and in fine preservation, and some time since he occupied himself almost entirely with the genus *Nepticula*, in which he made very valuable discoveries, having probably the best collection of its species in existence. Latterly he attended more to *Coleoptera.*

ENTOMOLOGICAL SOCIETY OF LONDON, *4th November*, 1872.—Prof. WESTWOOD, M.A., F.L.S., President, in the Chair.

Mr. S. Stevens exhibited a *Pieris Daplidice* and six examples of *Argynnis Lathonia* captured by himself near Dover, last September; also *Sesia asiliformis*, *Chœrocampa Celerio*, and *Deilophila livornica* from Brighton, and varieties of several other British *Lepidoptera.*

Mr. F. Smith exhibited a large collection of *Formicidæ* sent from Calcutta by Mr. Rothney, interesting, as shewing, in many cases, all the forms of each species. He also exhibited, and presented to the Society, the Minute-book of the Meetings of the Entomological Society existing in London from 1806 to 1822, in which were copied the Minutes of the pre-existing Aurelian Society. For this, a donation to Mr. Smith by Dr. J. E. Gray, the meeting passed a special vote of thanks.

Mr. Butler exhibited a remarkably perfect impression of the wing of a fossil butterfly (allied to the existing genus *Caligo*) in the Stonesfield slate.

Mr. Davis exhibited a large number of finely preserved larvæ of various insects.

Prof. Westwood remarked on the manner in which the common gnat (all females) had infested certain rooms in his house during the autumn. Although carefully destroyed each day, they were always replaced by others, notwithstanding that both doors and windows were shut.

Mr. Müller read notes on the habits of *Ozognathus cornutus*, Lec., a beetle allied to *Anobium*, which he had bred in numbers from a large woody Californian oak-gall, sent to him by Mr. Riley.

The Rev. R. P. Murray sent notes on variations of neuration in *Papilionidæ.*

Mr. Dunning read notes on *Atropos* and *Clothilla* with reference to Mr. W. A. Lewis's strictures on Dr. Hagen, pointing out that the English critic had himself been guilty of most egregious blunders.

A further portion of the proposed general Catalogue of British Insects comprising the *Ichneumonidæ*, *Braconidæ*, &c., compiled by the Rev. T. A. Marshall, was announced as published, and notes thereon by Mr. Marshall were read.

# INSTRUCTIONS FOR THE COLLECTION AND PRESERVATION OF NEUROPTEROUS INSECTS.

BY ROBERT M'LACHLAN, F.L.S.

*(continued from page* 104).

## SPECIAL INSTRUCTIONS.

### *Dragon-flies* (*Libellulidæ*).

I commence the special portion of these 'Instructions' by a consideration of the *Libellulidæ* (using the term in its broad sense), partly because they are the most familiar Neuropterous insects, and also because this division of the subject requires to be rather more detailed than will be necessary in most of those that follow; the sequence of the groups being a matter of little consequence.

The larger species (*Libellula*, *Æschna*, *Anax*, &c.) force themselves upon one's notice by their bold and fearless flight when engaged in 'hawking' in the bright sunshine. Some also (e. g. *Æschna grandis*) delight in the long twilight of a fine autumn evening; but it is useless to expect to see dragon-flies at large in dull weather; they may then be occasionally found at rest, and picked up with the fingers. As water-loving insects *par excellence*, the vicinity of that element is of course the most likely situation in which to seek them. But many carry on *their* collecting operations far from water, and broad heathy commons, or shady lanes (according to the species), are often enlivened by the presence of these tyrants of the insect-race. Boggy moors, treacherous to the footsteps of the too bold entomologist, and rocky mountain-sides, are peculiarly favourable localities. Never *chase* a large dragon-fly; such a proceeding is useless 'waste of tissue,' to say nothing of the chance of sinking to the middle in a bog, or coming violently to grief over herbage-hidden rocks and cavities. When one is seen frequenting a certain spot, wait till some tempting prey bring the pursuer to within reach, then, by a dexterous stroke of the net, secure it. Many species shew especial predilection for even a particular twig, and although they may make long and varied excursions, they will return again and again: so be not too precipitate, remembering that if one be struck but not captured, or sufficiently scared, it will go away at a pace defying pursuit, and not again put in an appearance. Mr. Wallace, in his 'Malay Archipelago,' relates that at one of the islands (Lombock) visited, and where large insects are used as food, the natives catch dragon-flies by means of limed twigs, the habit of haunting particular spots being no doubt taken advantage of. I have *frequently*, when out walking without a net, knocked down the large *species with my stick*, and specimens so caught often sustain little or no injury. The smaller slender-bodied species (*Agrion*, *Calopteryx*, &c.) can be captured with comparative ease, though even with them one must not rely upon obtaining a second stroke if the first miss its object. These frequent the sides of running brooks, reedy ponds (especially those formed by the 'backwaters' of rivers, which are often isolated in summer, though connected with the stream in the floods of winter), and weedy ditches. If there be a hedge-row in the vicinity, so much the better, as they will leave the margins of the pond or ditch for the sheltered side of the hedge, where they may be seen flying in swarms. Even the open expanse of a flowery meadow far from water, and the rides in woods, are often haunted by myriads of Agrions. Scarcely anything more beautiful exists in nature than a stream over which are flying our native species of *Calopteryx;* but the sight of a forest rivulet frequented by some of the brilliant exotic species must be a treat never to be forgotten.

It must be borne in mind that dragon-flies are long-lived insects, and, in some cases, several days elapse after hatching before the colours are fully matured: thus the male of *Libellula depressa* only obtains its pulverulent blue colour by slow degrees; for some days it is yellow, like the female; in a collection, it is always desirable to have specimens thus comparatively immature. *Very recently developed* examples are detected by the limp consistency of all their parts, and especially by the wings, which, when the insect is feebly flying, look as if (to use the apt expression of another observer) they had been dipped in mucilage; for the sake of understanding a species in all its conditions, it is even advisable to retain some of these.

With regard to the best means of conveying the insects home when caught, I can scarcely do better than quote the words of Dr. Hagen in the Entom. Weekly Intellig., vol. iv, p. 88. He says:—

> "In collecting the *Libellulæ*, I take a number of strips of paper doubled in two, "and place the wings of a caught specimen between the folds, and, with a pin at each "side of the wings, fasten it into my collecting box, without pinning the insect "itself: thus, in a small box, you may pack many in a small compass, taking care "not to put them within reach of each other's jaws."

Or the insects may be killed or stupified by a sharp pinch, and then be temporarily pinned in the box through the side of the thorax, the wings being kept down by a simple paper brace pinned at each end. A more elaborate plan is that explained by M. Blisson in the 'Annales de la Soc. Ent. de France' for 1840, who recommended that the insect when caught be placed in a sort of paper shroud, covering almost the whole insect excepting the head. With the slender-bodied small species it is, I think, better to pin at once in the ordinary manner between the wings: but, in all cases, emphatically regard the instructions not to put them within reach of each other's jaws; even specimens thought to be dead may revive, and then, upon arriving home, the results of a day's labour present no better appearance than jagged wings and mutilated bodies. Though, apparently, so insensible to pain, and tenacious of life, they are, in reality, easily killed, and Dr. Hagen even asserts that they die rapidly by simply placing the box close to a window in the hot sunshine: this I have not tried.

I now come to the most important parts of the subject: firstly, the preservation of them in collections without breakage; secondly, the preservation of the colours. On these points much has been written; and I will endeavour to combine the advice of previous writers with my own experience. The body of a dry dragon-fly is extremely liable to dislocation at any segmental division, the compound consolidated thorax being in reality the only part that will remain entire with any degree of certainty. The head is attached very slightly, yet this will often move round, almost as if on a pivot, without becoming detached: however, if it come off, it can easily be re-attached by a strong solution of shell-lac in spirits of wine; and some may even prefer to voluntarily behead all their specimens, and unite again with this or some similar liquid cement. Taking the smaller species (*Agrionidæ*, &c.) first, I do not recommend, with them, any system of disembowelling, believing, from experience, that the preservation of the colours is not furthered thereby. Dr. Hagen ('Intelligencer,' vol. ii, p. 82, and vol. iv, p. 88) advises that a needle with thread be introduced into the under-side of the thorax, and brought out *before* the termination of the body (mark especially, *before* the termination, so as not to injure the appendages of the apex), the thread being drawn backwards and forwards to remove some portion of the viscera, and a clean thread then inserted and cut off at each end. Baron de Selys-Longchamps, whose experience is probably greater than that of any other living entomologist in these matters, prefers ('Revue des Odonates,' p. 378) to use no endeavours to extract the viscera in the slender species. In this I agree with him, and explain here the plan I adopt. Having provided myself with some stout horse-hairs, I cut them up into short lengths; one of these lengths is inserted in the under portion of the thorax of the insect, and is gently pushed down until it reaches the extremity of the abdomen, but it is not pushed *through*, and, by this means, the anal organs can suffer no injury; the *thoracic end is* then cut off, and the specimen is thus rendered *incapable of breakage.* I conceive horsehair, when it can be obtained, to be infinitely preferable to any other substance, if only on account of its elasticity. The larger species require a more elaborate treatment, and, as a rule, it is certainly desirable to eviscerate at least the abdominal portion of the body. To do this, take a fine-pointed pair of scissors, and cut an incision along the membranous longitudinal suture of the under surface; the inside can then be extracted with a pen-knife, and a little brush-pad of cotton wool may be used to wipe out the remaining moisture. Then fill in the interior with clean cotton wool, a small quantity will suffice; and it is better to err on the side of too little than of too much; for, in the latter case, the body assumes an unnaturally dropsical appearance when dry. I prefer *white* wool in all cases. Many elaborate plans of using differently coloured paper, made into little rolls, or coloured wools adapted to the natural colour of the body, have been proposed, and some have gone so far as to attempt to imitate the markings by designs painted on the inserted paper (!). All this I look upon as unnecessary and, to a considerable extent, more than useless, trouble. It is in vain to attempt to reproduce the natural tints by artificial means; if the eviscerating process be performed with sufficient care, some, at least, of the original beauty will remain; more than this cannot be obtained, and should not be expected. Species of medium size may be partially cleansed by means of a piece of dry grass-stem drawn backwards and forwards (after the manner before noticed when speaking of the *Agrionidæ*), and breakage prevented by a clean piece of the same stem (or some similar substance) inserted permanently: decidedly the best material is the straight wire-like vegetable substance so extensively used in making mud-brooms; this possesses almost the elasticity of horse-hair, and is stout enough for even the largest species.*

In the 'Intelligencer,' vol. ii, p. 82 (see also vol. iv, p. 87), Dr. Hagen very justly remarks that:—"If a species be sufficiently common "to allow of many specimens being taken, we are sure to find that some "of them keep their colours well without any preparation." This I can emphatically confirm: I have, *inter alia*, large British *Æschnæ* which now, after several years, have their colours and intricate markings almost as fresh as when first caught, and this without the slightest preparation. But he goes on to say:—"These are specimens which "had not long escaped from the pupa state, and had not yet commenced "their ravenous career; their empty intestinal canal containing no "foul matter." The last part of this sentence is perfectly correct, for it is the decomposition of the partially-digested food (assisted in the ♀ also by the ova) that destroys the beauty of the specimens, and, at first, I accepted the explanation in all its details. Further consideration, however, induces me now to differ from him as to these specimens being recently developed. All dragon-flies take from two days to a fortnight (according to the species) to become fully mature; yet they eat in the meantime, and the individuals that do not change *are* usually fully mature. I look, therefore, to another explanation. Dr. Hagen hints that specimens taken very early in the morning are the most likely to retain their colours; this I consider not owing to the fact that they are recently developed, and have not fed at all, but that the food of the preceding day has been digested and passed away: and I should look to even more certain results in the case of specimens taken during the first incoming of fine weather after an uninterrupted series of gloomy and wet days.

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* This material is known in commerce as 'Bass' or 'Piassaba.' Mr. Jackson, of the Kew Museum, informs me that it is the produce of two species of Brazilian plants—Attalea funifera and *Leopoldinia Piassaba*.—R. McL.

I conclude the already too lengthy remarks in this chapter by a few hints to *foreign* collectors. If the specimens be pinned when caught, each should have a grass stem, or some analogous substance, run into the body as mentioned above, taking especial care that one end be *in the thorax;* otherwise it is impossible to send over a collection which shall arrive in good condition, and one large body becoming detached will play havoc with the others. But almost all can be sent in squares of paper folded into triangular envelopes, one in each: if the body then become broken, the pieces can be fitted together with certainty. They should not be placed in these envelopes *until dry*, that is, until after they have been for some time braced down as recommended for the field collecting box, otherwise the pressure alters the form, and decomposition sets in under very unfavourable conditions, so far as the colours are concerned.

Dry dragon-flies relax very easily, and need not remain upon the setting-board for anything like the time required for smaller and more delicate insects. When the bodies are broken, they can easily be reunited by using horsehair (or something stouter for large species), inserted into the dislocated portions, taking the precaution to smear the substance with the shell-lac cement, and the pin will also require some of this cement on the portion that will remain *in* the thorax, to keep it secure. Pins with the heads cut off, and wire, are not desirable mediums wherewith to connect broken fragments, as they become rusty, and eventually destroy the specimen. Baron De Selys even advises that the abdomens of all dry specimens should be voluntarily detached, and then re-connected. A solution of phenic (carbolic) acid in alcohol should be applied to each specimen to destroy mites or mould, and as a future preservative. The wool used for stuffing fresh specimens should also be saturated with some of this solution.

## *White-Ants (Termitidæ).*

Excepting in the extreme south, Europe is happily free from these pests, and I have never yet seen any species alive. Their habits are, of course, gregarious; and Mr. Bates' 'Naturalist on the Amazons' gives a general idea that will apply to any part of the world where they occur. Each species is well known to have many separate forms (soldier, worker, &c.), and all these should be obtained from one 'termitarium.' Possibly the best plan is to send home all the forms in spirits; or, if the winged examples be pinned, they should certainly not be expanded, for the following reasons. At certain seasons these shed their wings voluntarily, and this is done by these organs becoming detached at a transverse suture close to the thorax; and specimens at all times are liable to become thus dislocated, and more especially when the wings are expanded. If anything *could* induce me to relax my opposition to 'carding,' it would be in the case of winged white ants, for I know not how to keep them intact. The gravid female, with her enormously distended abdomen, must be placed in spirits.

The small allied family *Embidæ* is rare, and the species are not numerous. It appears to be certain that the varied conditions existing in *Termes* are not found here, but of some species the larvæ only are yet known; these occur under stones in sandy districts. M. Lucas states that the winged (or perfect) form of an Algerian species was seen running up and down the stems of low herbage, without attempting to fly when taken. The wings are not deciduous, and may be expanded in the usual way.

## *Psocidæ.*

These, for the most part minute, insects are to be met with on the trunks of trees, old palings, &c., as well as by beating the boughs over the net; and, for this latter operation, firs, larches, yews, and, in fact, all conifers, are particularly favourable. Where a species occurs it is usually abundant, for they are more or less gregarious: a few exotic species are of comparatively large size, but very few exceed half-an-inch in expanse of wings, and the majority are very much smaller. They are often imported with merchandize in ships; some small species (I speak here of the winged genera) naturally inhabit houses and warehouses. All run with extreme rapidity, and seldom use their wings: when captured, they should be placed in small pill-boxes, or (better still) in small glass tubes. Owing to their small size, only few will satisfactorily bear a long pin sufficiently strong, and for most it is necessary (if the long-pin system be adopted) to use the oblong pieces of pith, noticed in my general observations, for the purpose of mounting them. The wings should be expanded in the usual way on small setting-boards; but in the case of very small forms, the action of pinning will open the wings sufficiently to admit of the requisite examination. Very little is yet known of them, excepting European forms, though the exotic species are certainly *very* numerous, and are much needed: some are of extreme beauty, and sometimes even furnished with semi-metallic scales as in small moths. This is possibly the *most* neglected family of that neglected order *Neuroptera*, and the known species probably scarcely represent one hundredth part of those that exist:—*verbum sap.!*

Of the apterous (or semi-apterous) species (*Atropos*, *Clothilla*, &c.) it may be truly said that most entomologists need instructions as to how to get permanently rid of, rather than how to procure, them. They are everywhere, and always making themselves obnoxious by destroying the peace of mind—and the collections—of the Naturalist. One species, at least, is known to inhabit ants' nests, and many more may yet be discovered as ant-guests. Any permanent mode of preserving them as specimens is difficult. They may be carded—unsatisfactory!; mounted on mica—also unsatisfactory!; or mounted as microscopic slides—perhaps the most satisfactory. Collectors should try to get rid of the notion (still fostered by some) that these little pests are only larval forms of winged insects. Two species (one *Atropos*, one *Clothilla*) are common in all houses, and with them, no doubt, the larvæ of minute winged species that frequent human habitations; but the structure of these latter would detect them. It may here be well to remark, that there is a suspicion, not yet sufficiently grounded, that some winged tree-frequenting species have apterous conditions allied to what is found in *Termes;* it is certain there are forms with imperfectly developed wings, and I think these are always females.

### *May-flies (Ephemeridæ).*

Insects more attended to by the angler than by the entomologist, and upon which much poetry has been written on the taken-for-granted supposition that the romance of their few hours' existence is founded on fact. Possibly, however, some few live only a day or two as perfect insects; but these are exceptions. The neighbourhood of water, especially running water, is sure to produce multitudes of *May-flies.* The males of some large species (*Ephemera*) dance in swarms over the stream; whereas, the females are only to be found among the herbage, or taking short flights. The smaller species fly in calm weather more steadily and very slowly. Some are so abundant as to be used for manure, and even for feeding pigs (!), on continental rivers; and we are even told of shrubs being bent down by the multitudes of an American species. Mr. Eaton has done good service by his recent Monograph of the family, but very little is yet known of extra-European forms. The sexes generally differ much in appearance, and, owing to the fact of the final moulting being performed after the winged condition has been assumed, it is thus necessary to have four distinct series of each species, as Dr. Hagen observed in the 'Entomologist's Annual' (1863, p. 6). When pinned, it is a matter of indifference as to whether they be 'set' or not; the caudal setæ are very difficult to retain entire, but this is best facilitated by pinning high, and not allowing these setæ to come in contact with the drawer or box when dry. The true forms cannot be properly retained in dry specimens, and Mr. Eaton (see p. 5) advises that all be preserved moist: altogether they are unsatisfactory insects from a collector's point of view, and none suffer so much from the attacks of the apterous *Psocidæ*.

### *Stone-flies (Perlidæ).*

Always found in the vicinity of water, and, as a rule, running water, the more rapid the better. Mountain streams are especially favourable; and the larger species may be found among the herbage on the banks, or more readily under the large stones (sometimes partially in the water) that lie on the edges of the burns. The species of the genus *Pteronarcys* (which is almost peculiar to North America) frequent the spray of waterfalls, and are furnished in the perfect state with external respiratory filaments, showing that their habits are even then so aquatic as to necessitate the extraction of air from water. The large species fly but little, yet are difficult to capture, owing to their rapid sliding motion when alarmed; the smaller forms (*Leuctra*, *Nemoura*, &c.) fly in calm weather slowly, but moderately high, over the water. Some species (*Nemoura*) inhabit muddy ditches containing very little water, but the majority are emphatically torrent-loving insects. All may be pinned and set out in the usual way, care being taken not to break the caudal setæ of those larger forms that possess these organs; and it is also necessary to be careful in spreading out the folded and delicate anal portion of the hind-wings: in re-setting relaxed specimens, this portion of the wing is extremely liable to get torn. The whole family has no great amount of beauty to recommend it, but many of the forms are extremely curious, and comparatively little is yet known of them, the separation of the species being very difficult; and, indeed, it is almost imperative that for this purpose some of each should be placed in spirits or glycerine. They are no doubt most numerous in northern latitudes; but the streams of tropical mountains are certain to produce them in numbers. Few are known from the Southern Hemisphere, yet there are some curious forms in Australia and New Zealand.

With this family I conclude what is termed the Pseudo-Neuropterous division, viz., those which undergo an imperfect metamorphosis.

(*To be continued*).

## REMARKS ON MR. BARRETT'S "NOTES ON BRITISH *TORTRICES*" (ENT. MO. MAG., VOL. IX, PP. 124—130).

BY C. S. GREGSON.

*Amphysa Gerningana*, S. V.—This species is abundant at the end of June and in July, at Risley Moss, but local there on dry corners where the turf has been taken away; it is also plentiful at Bidston Hill, but again local: in both places, *Potentilla tormentilla* grows freely (where we take it) amongst the heather. I have bred it from flower-heads of sea-pink (*Statice armeria*) collected on the rocks at Isle of Man, away from heather, and append description of its larva:—

Length half an inch, slender, slightly wrinkled; head and neck reddish orange-yellow, with a few darkish markings thereon; the next five or six segments are dull darkish pea-green, the last four or five segments dull ochreous-olive, anal segment having a distinct black oval ring upon it, out of which spring three or four long white spines, the segmental spots small and indistinct.

Larvæ collected at the end of May and early in June on the coast at the Isle of Man, feeding in the flower-heads of the sea-pink (*Statice armeria*), drawing two heads together. In confinement making up therein, and appearing in the perfect state early in July. I have also bred it (July 9th) from larvæ collected in June on *Potentilla tormentilla*.

*Amphysa prodromana*, Hüb.—Doubleday gives *Walkeri* (Curtis) as his synonym for this species, not *Walkerana*. The species is plentiful on the edges of moors and in lanes leading to mosses and heaths, in Lancashire and Westmoreland, but I never knew it to extend far from the edges thereof. It certainly does not feed upon either sallow or willow; it is a low-growing plant feeder, and appears *in April*. I have only taken it where *Potentilla tormentilla* grows.*

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* *Salix fusca* is a low-growing plant.—EDS.

*Hypermecia augustana*, Wilk., the *H. augustana*, Hüb., *cruciana*, Haw., Linn. (?), *viminana*, Guen. var. (of Doubleday's Synonymic Catalogue).—It is, indeed, a most variable species; but that the "basal patch" seems always to be dusky greyish is unintelligible to me, with a series of over 40 specimens before me, all bred from sallow and willow growing on our coast: there are not two alike; commencing with light drab unicolorous specimens, they run down to dark rich reds of various shades,—some specimens having acute, some rounded wings; some with a decided round dark patch or spot near the apex; some having the outer ordinary dark markings hardly developed; whilst others have a streaky dark mark beyond the triangular light costal mark; and in one or two, the rich red of the upper-wings extends across the thorax. I breed great numbers of this species: collecting the larvæ in May and June in the terminal shoots of dwarf sallow and willows, when I am in want of the larvæ of *Ephippiphora ephippana*, &c.; ill-fed specimens are very small, well-fed ones large, but every degree of colour and markings pervades the broods bred here.

*Hypermecia augustana*, Hüb.—Of this I know not anything; but, if so disposed, I should have little difficulty in picking out from my series of specimens of *cruciana*, Linn., some which accord wonderfully well with the description of this species.

*Antithesia* (Steph.) *prælongana*, Gn. = *sororculana*, Zett.—We shall have to adopt Zetterstedt's name for this species. I bred it from larvæ collected early in June, the perfect insect appearing at the end of June; the larvæ fed on young birch trees growing on the banks of Lake Windermere.

*Antithesia cynosbatella*, Linn.—This species feeds in the buds and between united leaves of cherry trees, often defoliating the trees, in May.

*Antithesia dimidiana*, Sodoffsky, Bull. Moscou, 1830, I shall adopt.—Like Mr. Chapman, I have bred this from *Myrica gale;* I gathered the larvæ in May and June (first week), and the moths appeared at the end of the month. Risley Moss, Formby Moss, Belle Grange, Windermere. Bred specimens are always of a rich rosy colour.

*Antithesia marginana*, Haw.—Wilkinson is not far wrong when he says "a rare species, and not variable;" down here it is rare. When prospecting across from Belle Grange to Hawkshead in July, 1870, I met with this species *in plenty*, flying with scores of *Emmelesia ericetaria*, Curtis; I may say I took hundreds of both species, yet I hardly think anybody will call the latter a plentiful species. No species is really rare if you know *when* and *where* and *how* to look for it. My specimens were taken on a swampy part of the open forest land, hitherto untrodden by the feet of entomologists, where little else than tufts of cotton grass (*Eriophorum*) and small stunted heather and the asphodel grew; it did not occur on the drier parts of the moor, neither did it vary at all, except as all moths are liable to do in quality and size or sexually. All my specimens were tinged with pink when alive. I never before took it, except singly.

*Sideria achatana*, S. V.—Touching rarity or abundance, Mr. Barrett tells us that this species "swarms sometimes" near Mr. Stainton's residence: I have collected insects regularly in all sorts of places, principally north of Stafford, since 1826, but never saw a good or living specimen in the north; on the other hand, Mr. Stainton assures me he never had the pleasure of taking half-a-dozen *Antithesia marginana*.

*Dichelia Grotiana*, Fab.—Of this variable species, I have bred many forms, some of them being so like Mr. Barrett's description of *D. gnomana*, Linn., that they have stood named var. *D. latiorana;* but as these were bred from what I took to be *Grotiana* larvæ, I only supposed, and only still suppose, them to be varieties of that species. Some years ago, Mr. S. Stevens wished me to think them different, but I was too dull to see it.

Rose Bank, Fletcher Grove, Liverpool:
*November 2nd*, 1872.

## NOTES ON *TRICHOPTERYGIA*, WITH DESCRIPTIONS OF TWO NEW SPECIES.

BY THE REV. A. MATTHEWS, M.A.

Millidium trisulcatum, Aubé.

Examples of this species sometimes occur, in which the lateral sulci of the thorax are almost parallel to the medial. When I first observed specimens presenting this variation, I supposed that they would belong to *M. triramosum*, Mots., but a subsequent and very careful examination of a large series has convinced me that they are only a variety of *M. trisulcatum*. The type of *M. triramosum* which I received from the late Col. Motschoulsky is a much smaller and narrower insect, with the general surface of its head and thorax perfectly smooth, having no trace of the tubercular or rather alutaceous sculpture which is evident under a very high magnifying power in all specimens of *M. trisulcatum*.

PTILIUM CÆSUM, Erichs.

In 1870, Mr. G. R. Crotch took six specimens of a *Ptilium* in the Cambridgeshire fens, and which he kindly sent to me shortly after their capture; as he and I had previously taken *P. affine* in the same neighbourhood, and as at that time I had more work than I could well get through, I placed these insects among our reserves. In the spring of the present year, while examining these hoards, I came across the specimens in question, and was much pleased to discover that they all belonged to the *Pt. cæsum* of Erichson.

TRICHOPTERYX CARBONARIA, *n. s.*

*L. c.* $\frac{6}{16}$ *lin. Oblonga, convexa, saturata, nigra, pilis brevibus flavis sat dense vestita, capite permagno, oculis modicis; pronoto capite latiori, vix longiori, pone medium latissimo, lateribus valde rotundatis et ad basim contractis, tuberculis minutis, ordinibus sinuatis dispositis, interstitiisque reticulatis confertim ornato, margine basali valde depressa et fortiter sinuata, angulis valde productis, acutis; elytris brevibus, quadratis, capite atque pronoto haud longioribus aut latioribus, ad media latissimis, lateribus leviter rotundatis, apicibus latis, fere rectis, confertissime distincte et profunde asperatis; abdomine sat longe exserto; pedibus atque antennis robustis, sat obscure flavis.*

*Head* very large and broad, covered with minute tubercles in straight rows, with the interstices finely reticulated; eyes large, not prominent; antennæ moderate, slender, obscure yellow.

*Thorax* moderate, wider but scarcely longer than the head, widest behind the middle, with its sides much rounded and slightly margined, contracted towards the base, covered with minute, but distinct, tubercles arranged in wavy rows, with the interstices reticulate and shining, the basal margin much depressed and rather strongly sinuated, the posterior angles much produced and acute.

*Scutellum* rather large, triangular, closely and deeply asperate.

*Elytra* short, quadrate, narrower but not longer than the head and thorax, widest near the middle, with the sides slightly rounded, deeply and very closely asperate, with their apex paler, very broad and straight, the extreme edge white.

*Abdomen* considerably exserted, rather obtuse, with its apex obsoletely tridentate.

*Legs* robust, dark yellow, with the femora obscure.

*Under-parts* black, with the mouth and coxæ piceous.

This insect is allied to *T. picicornis*, Mann., but differs from that species in its paler and more slender antennæ, of which the 8th joint is linear, and not incrassate, and also in the totally different sculpture of its thorax and elytra. The only example which I have seen, I found in Thoresby Park, in Nottinghamshire, in August, 1868; since then I have waited in vain for the occurrence of other specimens, but have now determined to separate and describe it as a distinct species on the strength of the very essential characters which I have pointed out.

### TRICHOPTERYX LÆTITIÆ, *n. s.*

*L. c.* $\frac{6-7}{16}$ *lin. Oblongo-ovalis, modice convexa, nigra, haud nitida, pilis pallidis dense vestita, capite modico; pronoto sat parvo, postice dilatato, ad basim latissimo, tuberculis minutis, ordinibus transversis irregulariter dispositis, interstitiisque profunde et confertim reticulatis sat dense ornato, margine basali sinuata, angulis acutis valde productis; elytris plus minusve attenuatis, capite atque pronoto vix longioribus aut latioribus, confertim asperatis, lateribus fere rectis, apicibus rotundatis, dilutioribus; pedibus obscure flavis, antennis piceo-nigris.*

*Head* moderate, triangularly produced in front, sparingly covered with minute tubercles, the interstices shining; eyes large and prominent; antennæ short and slender, pitchy-black; palpi pitchy-black.

*Thorax* rather short, not very convex, rather longer than the head, dilated posteriorly, widest at the base, with the sides moderately rounded and margined, covered with minute tubercles closely arranged in transverse wavy rows, with the interstices closely and rather deeply reticulate, the basal margin rather strongly sinuated, with its angles acute and much produced, the extreme edge of the sides and base pale.

*Scutellum* large, triangular, rather acuminate, closely, but not deeply, asperate.

*Elytra* oblong, more or less strongly attenuated towards the apex, scarcely longer or wider than the head and thorax, moderately but closely asperate in transverse rows, with the sides nearly straight, the apex much rounded, paler, with its extreme edge white.

*Abdomen* much exserted, obtusely conic, with the posterior margin of each segment paler, and the apical segment distinctly but obtusely tridentate.

*Legs* moderate, dusky yellow, with the basal joint of the anterior tarsi slightly dilated.

*Under-parts* black, with the mouth and coxæ piceous; femora dusky.

Allied to *T. fascicularis*, Herbst, but differs from that species in its smaller and more depressed thorax, shorter and pitchy-black antennæ, and in its conspicuously smaller size. It was found in large numbers, unmixed with any other form, by my sister, Miss L. Matthews (after whom I have named the species), in Belgium, near Spa, in August last.

*Gumley: November, 1872.*

# NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 4).

BY F. BATES.

## ALEGORIA SALLEI, *sp. n.*

Glossy black; palpi pitchy-red, the labials sometimes brighter red: mentum with the front angles strongly rounded, punctured (but not closely), an oblong depression at each side near the margin; last joint of maxillary palpi moderately securiform; antennæ of the same form as in *A. dilatata*, black, the outer joints dusky (sometimes slightly rufescent); labrum sparingly and minutely punctured, the anterior angles strongly rounded, the apex broadly notched in the middle; head with a broad transverse depression on the front, the epistomal suture well marked at each side by a very fine deep line; a few well marked punctures on the front and neck, rest of head sparingly and minutely punctured; the antennary orbits are prominent in front of the eyes, giving to the head, at the sides, the square angular appearance seen in *A. dilatata;* prothorax one-fifth wider than long, sides gradually (and slightly sinuously) rounded to five-sixths their length, thence somewhat abruptly contracted and sub-parallel to the hind angles, which are slightly outwardly directed; apex sinuous, the fore angles prominent; base sinuous; base and sides somewhat strongly margined and grooved, apex margined only to one-third the width at each side; laterally, at each side the disc, are two or three shallow rounded foveæ, and there is also an impression at each side the middle of the base; minutely punctured at the sides and angles, the punctuation at the front angles the strongest; scutellum with a transverse depression on the disc, impunctate; elytra elongate, sub-parallel; base slightly sinuous, humeral angles prominent, rounded; punctate-striate, intervals flat on the disc, convex at the sides and apex, impunctate; under-side deep black, less shining than the upper; flanks of the prothorax faintly rugose, impunctate; prosternal process longitudinally convex, scarcely margined, faintly punctate, the extremity obtuse; legs shining black, feebly punctate; anterior femora rather strongly arched, scarcely more robust (but less compressed) than the four posterior; anterior tibiæ elongate, sinuous, apically inwardly curved and produced, keeled on the upper-face, the apical half outwardly curvedly expanded and hollowed out superiorly for the reception of the tarsi in repose, the under-side of this expansion is thickly beset with short conical teeth; middle and hind tibiæ shorter, sub-equal, thickened at the extremity (which is also closely denticulate at the outer edge and on the under-side), the apex inwardly produced: tarsi short, massive; first joint of the posterior not longer than the last; mesosternum somewhat abruptly declivous in front; intercoxal process broadly triangular at apex.

Long. corp. 7¼ lin.

*Hab.:* Mexico; three examples.

In this and the following two species of *Alegoria* there is a considerable departure from the generic type; indeed, some of the characters (those of the form of the anterior tibiæ more especially in the present species, and of the last joint of the maxillary palpi, form of prothorax, antennæ, mesosternum, and intercoxal process, in the two following) are so strong, that, in a group less subject to extraordinary variation than this to which *Alegoria* belongs (*Ulomides**), they would necessitate the creation of two new genera.

### ALEGORIA QUADRATICOLLIS, *sp. n.*

Oblong, sub-parallel, depressed; glossy black, the antennæ, tarsi, labrum and maxillary palpi dark reddish-brown, the labials bright red; mentum strongly transverse, broadly emarginate in front, nearly as broad at base as at apex, sides strongly and sub-angularly rounded, coarsely (but not closely) punctured, sulcate down the median line; last joint of maxillary palpi elongate, ovoid, and truncate at tip; labrum broadly (almost arcuately) rounded in front, the anterior margin entire, rather coarsely but sparingly punctured; head with a large transversely oval depression on the front (but more posteriorly placed, and more nearly between the eyes, than the similar depression in *A. Sallei*), with another, somewhat angular, on the epistoma, at each side of its emargination; antennary orbits much less prominent in front of the eyes, and more oblique, than in *A. dilatata*, so that the head, at the sides, is less parallel and angular; epistoma more contracted in front, and the emargination (or notch) narrower and deeper than in *A. dilatata* or *Sallei;* epistomal suture obsolete; sparingly and finely punctured; the rest of the head—except the neck which is strongly rugose-punctate—moderately and not closely punctured; antennæ with joint 2 large, sub-globular, 3 a little longer than 4, 5, or 6, and all (*i.e.* 3—6) sub-cylindrical, 7—10 gradually broader, sub-triangular, moderately perfoliate, 11 large, ovoid†; prothorax sub-quadrate, depressed, wider than long, a little narrowed anteriorly, slightly sinuously rounded at the sides, sinuously emarginate in front, rather strongly sinuate at the base; anterior angles somewhat prominent, rounded; hind angles obtuse; sides and base margined (but not grooved as in *A. Sallei*), anteriorly the border is only faintly margined for one-third the width at each side; finely and not closely—especially on the disc—punctured; there are three impressions at the base; scutellum rather large and having three or four transverse punctures on the disc; elytra oblong, slightly widest behind the middle, strongly depressed, sides somewhat sinuously and broadly margined; base strongly sinuous, humeral angle prominent; rather finely punctate-striate, the punctures regular and rounded; intervals flat, sparingly and finely punctured, and slightly (when viewed obliquely) transversely rugulose; legs shining black; anterior femora strongly compressed, sub-claviform, slightly more robust than the four posterior; the tibiæ are similar in form to those of *A. dilatata*, but less robust, and the denticulations at the outer edge of the four anterior are much feebler and more regularly formed in this species; flanks of prothorax faintly longitudinally wrinkled; mesosternum vertical in front, profoundly and clearly excavated into form of V; prosternal process prominent, lanciform, longitudinally convex, not margined, finely punctured; intercoxal process narrow, tapering, the apex pointed; first joint of posterior tarsi longer than the last. Long. corp. 4¼ lin.

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* In the genus *Uloma*, the palpi, mentum, &c., are well known to vary considerably in form, &c., not only in the different species, but also in the sexes of the same species, and the character offered by the epipleural fold, which may ordinarily be relied upon, is here inconstant, it being (so far as my experience goes) more or less abruptly terminated before the apex of the elytra in all the species from the Old World and from North America, whilst in all those from Central and South America it is more or less broadly continued to the apical extremity: the hind tarsi also follow the same rule, all those species coming from Central and South America have the 1st joint constantly shorter than the last, and all those from the Old World and from North America have the 1st joint constantly equal to—in some species longer than—the last.—F. B.

† *In A. dilatata* the transverse joints are strongly perfoliate, and more or less obliquely *truncated at each side the* antennal axis, and the last joint is not ovoid; in some examples the *antennæ are slightly distorted,* with joints 6, 7, or 6, 7, 8 produced within, and somewhat pointed; *one sees a similar thing in* ♂ of *Uloma orientalis*, &c.—F. B.

*Hab.*: Venezuela; one example.

ALEGORIA PARALLELA, *sp. n.*

Smaller, narrower, much less depressed, and less glossy than the preceding; antennæ, palpi and tarsi clear red, legs and labrum chestnut-red; the mentum is less transverse than in the preceding species, the middle of the fore margin is notched, the fore angles are strongly rounded, and the sides more narrowed to the base, the punctuation is coarser and sparser, and it is not furrowed (or sulcate) down the median line; the last joint of the maxillary palpi is of the same form as in the preceding, *i. e.*, elongate, ovoid, and truncate at tip; the labrum is broadly, and almost squarely, truncated in front; the epistoma and antennary orbits are of the same form as in the preceding; the outer (terminal) five joints of the antennæ are of the same form as in *A. quadraticollis*, but joint 6 is much larger and wider,* joint 3 longer and somewhat obconic, and joint 2 smaller and cylindrical; the elevated ridge between the eyes (on the crown) is much less marked than in the preceding species, consequently the depression on the front is faint or almost obsolete, that at each side the epistoma is equally strongly marked; the neck is much less coarsely rugose-punctate; the prothorax in the present species is a little squarer, consequent on the sides anteriorly being somewhat less contracted, the emargination in front is shallow and less sinuous, and the anterior angles less prominent and more depressed, the base is equally strongly sinuous, and has the three impressions as in the preceding; the punctuation—especially at the sides—is sparser; the elytra are more parallel (*i. e.*, not, or scarcely perceptibly, expanded behind the middle), somewhat convex (the lateral margins not being visible when the insect is looked at from above), the punctures in the striæ are less rounded and regular; the legs, pro- and mesosternum, and intercoxal process are all formed as in the preceding species. Long. corp. 3¾ lin.

*Hab.*: Brazils; one example.

It is possible this may be the "second species" mentioned by Lacordaire (Gen. Col., v, p. 326), and it is more than probable that it will eventually be linked to the preceding as but an extreme variety.

*Corrections.*—In No. 2, p. 133, in my description of *Epiphysa ovata*, &c., I have written of the *prosternum* it has "the *apical* two-thirds," &c., it should be the *posterior* two-thirds, &c. On page 134, I have written the prosternal groove *anteriorly* is quite smooth, &c., it should be the prosternal groove *posteriorly* is quite smooth, &c. I shall always describe as the hind or posterior portion of the *prosternum* and *prosternal process* that portion nearest to, and facing, the *mesosternum*.

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* The present species may be said to have a gradually widening club of six joints, and *quadraticollis* one of five joints.—F. B.

In No. 3,

On p. 150, line 8, *for* "in", *read* "on".
„ 16, " "elytra", *read* "elytron".
„ 25, „ "contracted", *read* "compacted".
„ 35, „ "near the mesosternum", *read* "behind".
„ „ 151, „ 33, „ "species", *read* "genus".

Leicester: *December*, 1872.

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## A DESCRIPTIVE LIST OF *EROTYLIDÆ* COLLECTED BY GEO. LEWIS, ESQ., IN JAPAN.

BY G. R. CROTCH, M.A.

[WITH ADDENDA TO THE GENUS LANGURIA BY E. W. JANSON AND C. O. WATERHOUSE].

### FAM. EROTYLIDÆ.

### *Sub-fam.* I. *LANGURIIDES.*

### Genus LANGURIA, Latr.

L. LEWISII, *sp. n.*

*Elongata, postice paulo attenuata, ænea, nitidissima; capite parce evidenter punctato; thorace parcissime obsolete punctato, latitudine dimidio longiore, angulis anticis deflexis, rotundatis, posticis productis, acutis, basi tenue marginato, ante scutellum sat profunde impresso, utrinque striâ obliquâ divergenti impresso; elytris punctato-striatis, interstitiis leviter coriaceis; corpore subtus rufo-ferrugineo. L. c. 4—5 lin.*

Kawachi, in Nipon; rather abundant by beating.

Eyes finely granulated, antennæ with the 3rd joint longer than 4th, apparently 4-jointed club, elytra without an epipleural fold; sutural stria not punctate, obsolete near the base.

L. UNICOLOR, *Mots.*, Bull. Mosc., xxxix, p. 178 (1866).

*Statura L. Menetriesii sed duplo latior. Elongata, antice posticeque attenuata, convexa, nitida, sub-viridiænea, corpore subtus ore pedibusque plus minusve brunneis, antennis nigris; capite punctulato; thorace sub-transverso-trapezoidale, subtiliter punctato, marginato, dorso utrinque foveolato; elytris thorace paulo latioribus, punctato-striatis, interstitiis fere planis. L. c. 1¼ lin.*

L. NIGRIPES, *sp. n.*

*Elongata, postice angustata, læte ferruginea, nitida; antennis (articulis 1—2 rufis) pedibusque nigris, femoribus basi anguste rufis; capite parce punctato; thorace antice dilatato, parce fortiter punctato, lateribus*

*rotundatis, marginatis, basi crasse marginato, transversim impresso, utrinque striolâ profunde impresso, angulis posticis acutis ; elytris fortiter punctato-striatis, striâ suturali punctatâ, interstitiis lævibus.*
*L. c.* 3¼ *lin.*

Nagasaki in Kushiu, Hiogo in Nipon. Kiukiang and Foochow, China.

Eyes convex, finely granulated, antennæ with a 5-jointed club.

L. PRÆUSTA, *sp. n.*

*Elongata, postice angustata, rufo-ferruginea, antennarum clava, tarsis, femorum elytrorumque apicibus nigris ; capite parce punctato ; thorace latitudine longiore, obsoletius parce punctato, antice convexo, dilatato, basi marginato, transversim impresso, profunde punctato, striolâ utrinque obliquâ impresso ; elytris punctato-striatis, interstitiis lævibus, striâ suturali punctatâ, integrâ.* *L. c.* 3½ *lin.*

Distributed as the last species in Japan and China.

Antennæ with a 3-jointed club.

L. ATRICEPS, *sp. n.*

*Elongata, sub-parallela, nigra, thorace, prosterno femorumque basi rufis, elytris cyaneis ; thorace latitudine longiore, antice convexo, dilatato, basi tenue marginato, transversim impresso, profunde punctato, striolâ utrinque brevi impresso ; scutello nigro ; elytris punctato-striatis, basi marginatis, interstitiis lævibus.* *L. c.* 2—2¼ *lin.*

Nagasaki, very local.

Antennæ with a 5-jointed club ; eyes finely granulated, convex.

L. RUFICEPS, *sp. n.*

*Elongata, sub-parallela, ferruginea, antennis (basi excepta) abdomine pectoreque nigris, elytris cyaneis ; capite parce punctato ; thorace latitudine longiore, parce obsoletius punctato, utrinque striolâ brevi impresso ; scutello rufo ; elytris basi marginatis, punctato-striatis, striâ suturali punctatâ, integrâ.* *L. c.* 2¼ *lin.*

Abundant in Kushiu, and occurs in China in the same latitude.

Antennæ with an apparently 4-jointed club.

(L. ?) JANSONI, *sp. n.*

*Elongata, postice antennuata, tota rufo-ferruginea, nitida ; capite thoraceque parce punctatis, hoc sub-elongato, lateribus parallelis, antice convexo, basi tenuissime marginato, late transversim impresso, utrinque vix striolato ; elytris basi marginatis, obsolete striato-punctatis, interstitiis lævibus.* L. c. 1½ lin.

A common species throughout Nipon and Kushiu.

Forms the type of a distinct genus with coarsely granulated eyes, elongate antennæ, a 3-jointed club, and short tarsi.

G. R. CROTCH.

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An apparently non-descript species of *Languria*, overlooked by Mr. Lewis when submitting his Japanese *Erotylidæ* to Mr. Crotch, having been just placed in my hands by the former gentleman for description, in order to render the above paper as complete as possible, I have drawn up the following characters from the solitary example hitherto found by him:—

L. PRÆTERMISSA, *sp. n.*

*Elongata, sub-parallela, rufo-testacea, antennis extrorsum, scutello, abdominisque apice nigro-piceis, elytris cyaneis; thorace elongato, postice angustato; pedibus gracilibus.* *L. c.* 2 *lin.*

*Antennæ capitis thoracisque prope longitudine, tenuiores, clavâ tri-articulatâ, rufo-testaceæ, articulis* 5 *ultimis nigro-piceis. Caput vertice fortiter parcius punctatum. Thorax apice coleopterorum latitudine anticâ paulo longior, basin versus angustatus, sat convexus, parce punctatus, postice marginatus, transversim impressus, et utrinque striolâ brevi notatus. Scutellum læve. Elytra thorace plus duplo longiora, punctato-striata, interstitiis planis, striâ suturali integrâ, punctatâ. Pedes elongati, rufo-testacei, tarsis apice picescentibus.*

Hiogo, one example on Maiyasan.

This species is most nearly allied to *L. ruficeps*, Crotch, but is readily distinguished by its narrower form, slender antennæ and legs, coarsely punctured head, the proportions and sculpture of the thorax, and its rufo-testaceous meso- and meta-thorax and basal segments of abdomen.

E. W. JANSON.

28, Museum Street, London, W.C.: *Nov. 22nd*, 1872.

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The three following apparently new species of *Languria* from Japan have been detected since the above descriptions were written.

LANGURIA NIGRITARSIS, *sp. n.*

*Elongata, nitida, suprà cupreo-ænescens; corpore subtus, ore, femoribus tibiisque rufo-piceis, metasterno æneo-maculato, antennis tarsisque nigris. Capite sat densè punctato. Thorace longitudine vix latiori, anticè paulo angustato, ante angulos posticos paulo constricto, parum convexo, posticè transversim impresso,* parce *subtilius punctulato;*

*lateribus leviter rotundatis; angulis anticis vix prominulis, rufis, posticis acutiusculis; scutello lævi; elytris apicem versus angustatis, apice rotundatis, striato-punctatis, interstitiis subtilissime sub-seriatim punctulatis.* *L. c.* 4 *lin.; lat.* 1 *lin.*

Very closely allied to *L. Lewisii*, Crotch, but, besides the colouration, it differs from that species in the thorax being shorter, and the anterior angles being very slightly prominent, whereas in *L. Lewisii* they are rounded. The punctures of the striæ on the elytra are continued to the base, but in *L. Lewisii* they are almost obliterated in the region of the scutellum.

The thorax is distinctly narrower than the base of the elytra, slightly convex, slightly narrowed in front, gently rounded at the sides, slightly narrowed before the posterior angles, and not quite as broad at the posterior angles as across the middle of the thorax.

The punctuation is sparse and delicate, almost obliterated towards the sides.

Awomori Bay, extreme north of Nipon. One example. Coll. G. Lewis.

LANGURIA PECTORALIS, *sp. n.*

*Elongata, nitida, suprà ænea; corpore subtus et ore rufo-piceis; metasterno, abdominis segmentis* 1 *&* 2 *apiceque æneo-maculatis, antennis nigris, pedibus fuscis, geniculis tarsisque nigro-piceis. Capite densè punctato. Thorace longitudine paulo latiori, antice vix angustato, ante angulos posticos vix constricto, parum convexo, postice transversim impresso, parce sat distincte punctato, lateribus leviter rotundatis, angulis anticis prominulis, obtusis, rufis, posticis acutiusculis. Scutello lævi. Elytris apicem versus angustatis, apice rotundatis, striato-punctatis, interstitiis subtilissime sub-seriatim punctulatis.*

*L. c.* 4½ *lin.; lat.* 1⅛ *lin.*

Extremely close to *L. nigritarsis*, but distinguished from it by the colour, by the (still very slightly) prominent anterior angles of the thorax, which is slightly less convex. The thorax is slightly narrower than the base of the elytra, very little convex, very slightly narrowed before the posterior angles, as broad at the posterior angles as across the middle of the thorax. The punctuation is distinct, but not very close, less distinct towards the sides.

Hakodaté, in Yesso. Three examples. Colls. B. M. and G. Lewis.

LANGURIA CONVEXICOLLIS, *sp. n.*

*Elongata, nitida, supra ænea;* corpore subtus rufo-piceo; meta-

*sterno, abdominisque segmentis* 1 & 2 *æneo-maculatis; pedibus rufo-piceis, geniculis tarsisque nigro-æneis. Capite sat dense punctato. Thorace longitudine latitudine æquante, antice angustato, ante angulos posticos constricto, per-convexo, postice transversim impresso, sat dense et distincte punctato, lateribus rotundatis, angulis anticis prominulis, rufis, posticis acutiusculis. Scutello lævi. Elytris apicem versus angustatis, apice rotundatis, striato-punctatis, interstitiis subtilius seriatim punctulatis.*
*L. c.* 4¾ *lin.; lat.* 1⅕ *lin.*

Closely allied to the preceding, but at once distinguished by its convex thorax, which is the same width as the base of the elytra, distinctly narrowed in front and before the posterior angles, the sides much and evenly rounded, distinctly narrower at the posterior angles than across the middle; the anterior angles also are a trifle more prominent than in either of the preceding.

Hakodaté. One example. Coll. G. Lewis.

C. O. WATERHOUSE.

British Museum: *December* 11*th*, 1872.

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### *Sub-fam.* II. *EROTYLIDES.*

### *Trib.* I. *DACNINI.*

### Genus DACNE, Latr.

D. JAPONICA, *sp. n.*

*Oblonga, rufo-ferruginea, elytris nigris, fasciâ communi fulvâ, humeris maculâque denticulatâ scutellari nigris; capite thoraceque fortius punctatis; scutello rufo, punctulato; elytris sub-seriatim, lateribus confuse sat crebre punctatis.* *L. c.* 1¾—2 *lin.*

Nagasaki, in fungi on trees.

D. PICTA, *sp. n.*

*D. japonicæ proxima, sed minor, antennis brevioribus, clavâ valde transversâ, tarsis brevioribus, thoracis disco late nigro, elytris fasciâ prope basin fulvâ utrinque interruptâ notatis.* *L. c.* 1½ *lin.*

Distributed throughout the islands.

### Genus EPISCAPHA, Lac.

E. FORTUNII, *sp. n.*

*Nigra, oblonga, tenuissime pubescens, sparse haud profunde punctata, thorace sub-transverso, lateribus marginato, basi bisinuato; elytris haud seriatim punctatis, singulis annulo humerali cum processu hamato suturam versus, fasciâque multidentatâ et sub-arcuatâ infra medium, rufo-sanguineis.* *L. c.* 8 *lin.*

*Hiogo,* in fungi on firs, in great profusion. China (Fortune).

### *Trib.* II. *TRIPLACINI.*

### Genus TRIPLAX, Hbst.

T. JAPONICA, *sp. n.*

*Oblonga, læte ferruginea, antennis (basi excepta) pectore elytrisque nigris; capite thoraceque fortiter parce punctatis, hoc valde transverso; scutello nigro, punctis raris impressis; elytris punctato-striatis (striis* 9) *interstitiis fortiter sed parcius punctatis.*

*Var. antennis ferrugineis.* *L. c.* 2—2¼ *lin.*

Nagasaki and Hiogo.

Resembles *T. rufipes*, but is less ovate, the antennæ are much longer and with only three joints red, the 3rd joint is longer than the others, joints 4 and 5 are also elongate; the maxillary palpi are broadly dilated, the elytra immarginate.

### Genus CYRTOTRIPLAX.

*Tritoma*, Fab. [*nec* Geoff.]: type, *bipustulata.*

C. LEWISII, *sp. n.*

*Ovata, tota ferruginea, clypeo, antennis pedibusque nigris; capite thoraceque parce punctatis, hoc basi sinuato, tenuissime marginato; scutello magno, sub-lævi; elytris punctato-striatis, interstitiis evidenter punctulatis; abdomine punctulato, lineâ coxali vix ullâ, metasterno lateribus fortius punctatis, mesosterno transverso, plano, prosterno truncato.*

*L. c.* 2½ *lin.*

Ipongi, Nagasaki, in fungoid growth on rails.

Antennæ with the 3rd joint sub-elongate.

### *Trib.* IV. *EROTYLINI.*

### Genus AULACOCHILUS, Lac.

A. JAPONICUS, *sp. n.*

*Ovatus, supra nigro-cyaneus, antennis pedibusque nigris; capite thoraceque fortiter parce punctatis; scutello lævi; elytris seriatim punctatis (seriebus* 8), *interstitiis evidenter parce punctatis, subtilissime vix visibiliter pubescentibus, singulo vittâ obliquâ basali (a basi prope scutellum fere ad marginem pone humerum), fasciâque communi (antice concavâ) sub-apicali marginem haud attingenti, rufo-ferrugineis.*

*L. c.* 3½ *lin.*

On Maiyasan, Hiogo; two examples.

This is the first species from Japan.

G. R. CROTCH.

Cambridge: *October*, 1872.

*Note on Acidota cruentata, Mann., var. ferruginea, Erichson, Gen. et Spec. Staph., p.* 862; *Kraatz.*—This interesting and very rare form of a somewhat scarce species was not known to me as British, until Mr. R. Lawson took five specimens of it, unaccompanied by the type, in flood refuse, during the past autumn, near Scarborough; in the neighbourhood of which town he also took in October last many examples of ordinary *cruentata*, out of moss, without finding one of the above mentioned race. I think, also, that there is one of the latter in the collection of the Marquis of Ripon, taken by Mr. E. A. Waterhouse near Studley, Yorkshire; and I am quite certain that out of the numerous specimens of *cruentata* found by myself some years ago (under peculiar circumstances) at Chelsea, not one departed in the least from the normal condition of the species.

Both Erichson and Kraatz, though attributing a different value to the insect now under consideration, agree in referring it with doubt to Lacordaire's description of *ferruginea;* in which doubt I think they were more than justified, as, from the latter author attributing the same length of elytra to it and to *crenata*, it is clear he could not have meant anything but type *cruentata*, to which both Fairmaire (Faune, &c., p. 634) and Fauvel (Faune Gallo-Rhénane, iii, p. 89) refer Lacordaire's insect,—without, however, mentioning any variety; Fairmaire simply quoting the reference to it (Faune Ent. Par. I, p. 477, erroneously 447) without even the synonymic name, and Fauvel intimating an examination of the type. De Marseul, in his Catalogues, follows Erichson, considering *ferruginea* to be a good species, and attributing *quadratum*, Zett. (*quadrum*, Zett., *olim*, *nec Arpedium id.*, Grav.) to it as a synonym; but there is nothing whatever in Zetterstedt's description to justify this, and Thomson (Skand. Col. iii, p. 205) considers the latter to be another species altogether (though how he reconciles Zetterstedt's "elytra thorace vix dimidio longiora" with his own "prothorace parum longiora" is not exactly clear). Kraatz gives *ferruginea* as "var.?" of *cruentata;* and from only knowing of two specimens of it (including Erichson's one), is evidently unable to form a decided opinion on the point. But Mr. Lawson's captures enables me to state positively that *ferruginea*, Er., is only a form of *cruentata;*—compared with which it is smaller, narrower, and with markedly shorter elytra, of which the punctuation seems more confused, as the abbreviation naturally diminishes the middle portion, where it is less irregular. In all other respects, there is not a particle of difference to be found.

It may not be uninteresting to note that, judging from a single specimen in my collection (given to me long ago by the Rev. T. A. Marshall), *A. rufa*, Grav., holds a precisely analogous position with regard to *A. crenata*, having shorter elytra, which are therefore somewhat less strongly and regularly punctate-striate. Of this character, however, I do not see any mention in the authors above quoted.

Thomson adopts *rufa*, Gyll. (1810), for *cruentata*, Mann. (1830); considering, as I presume, that *rufa*, Grav. (1802), being sunk as a colour-variety of *crenata*, does not interfere with Gyllenhal's insect of the same name.—E. C. Rye, 10, Lower Park Field, Putney, S.W.: *December*, 1872.

*Note on Agapanthia micans, Paykull.*—As our Longicorn beetles are so few in number, and (as one would think) so well known, it very seldom becomes necessary to refer to one's specimens: but I was, nevertheless, recently greatly surprised to find among my neglected series of *Stenostola ferrea*, an individual of the above mentioned species (not hitherto reputed British), which has certainly been in that position ever since I had a collection. I have never once taken S. *ferrea*, and I have no note of the locality of this specimen, which, according to my remembrance, was given to me by an old correspondent in one of the midland counties. The species occurs in France and Germany (also in Italy, Dalmatia, the Caucasus, Russia, and elsewhere), so that it may really be indigenous, and this note will, at all events, serve to direct attention to the subject. The insect is of the size and facies of *S. ferrea*, but of a purple or dark violet colour, with comparatively shorter elytra, longer (12-jointed) antennæ, and simple claws to the tarsi (not cleft at the base).—Id.

*On the superficial sexual characters of the British species of Bruchus.*—The male characters of the *Bruchi* have scarcely been noticed by English writers, yet they are so useful in determining the species, that I am induced to offer a few notes on those species I have been able to see. Walton notices the male characters of *B. atomarius* and *luteicornis;* Thomson, in addition, points out those of *loti.*

Section *a* [Hind femora toothed].

*B. pisi*, L., seems to present no appreciable external sexual differences, beyond, perhaps, having the posterior tibiæ and tarsi a trifle broader in the ♂.

*B. pectinicornis*, L. Antennæ of ♂ darker than in ♀, and with joints 4—11 triangularly developed internally; antennæ of ♀ simple. Middle tibiæ simple in both sexes.

*B. rufimanus*, Sch. Antennæ of ♂ joints 6—11 wider than in ♀, especially joints 6 and 7; middle tibiæ of ♂ much bent and furnished with a hook at the apex.

*B. atomarius*, L., Thoms.* (*seminarius*, Walton, *nec* Gyll.). Middle tibiæ of ♂ slightly bent and armed with a small tooth on the inner margin, about a quarter of their length *before* the apex.

*B. luteicornis*, Illig. Antennæ clear red in ♂, sometimes the five terminal joints a little darker; middle tibiæ of ♂ (red) bent and armed at the apex with a bifid and blunt black hook.

*B. loti*,† Pk. Middle tibiæ of ♂ with the apex incurved and armed with a bifid hook.

Sec. *b* [Hind femora not toothed].

*B. ater*, Marsh., *nec* Thoms. (*villosus*, F.). The males seem to have the hind tarsi shorter and broader, with the basal joint thicker and more curved.

*B. canus*, Germ. Antennæ of ♂ longer than in ♀, joints 5—10 a little developed triangularly internally; tibiæ simple in both sexes.

*B. cisti*, F. (*ater*, Thom., *nec* Marsh.). Antennæ of ♂ longer and much stouter than in ♀; joints 5—10 triangularly developed internally.

Of *Bruchus nubilus*, Boh., there is one, and of *B. lentis*, Boh., two, in Dr. Power's collection; these belong to Sec. *a*. These specimens are, I think, ♀; at all events, they present no appreciable sexual characters.

*Bruchus affinis* and *viciæ* (*nigripes*, Gyll.) I have not seen.—H. S. Gorham, Rusper: *November* 12*th*, 1872.

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* Thomson, without assigning any reason, proposes to adopt this name for the insect known to us as *seminarius*. There are two distinct European species of the latter name, one of Linnæus, the other of Gyllenhal. Our insect is Linnæus's (as proved by Walton's examination of that author's types); and it would seem that Gyllenhal's species, being posterior in date, is the one that would require re-naming. Possibly, Thomson has considered that the adoption of *atomarius*, under which name Linnæus appears from this to have again described his species, will avoid the coining of a new name for that of Gyllenhal's.—E. C. R.

† According to Allard ('Etude sur le groupe des Bruchites,' supplemented in 'Petites Nouvelles Entomologiques,' No. 6, and Berlin. ent. Zeitschr., xiii, p. 326 *et seq.*), the true *B. loti* does not exist in any collection that he has seen; the inference from his remarks being that *B. oxytropis*, Schön., usually represents it. *B. loti* is stated to be distinguished from the latter by its punctiform scutellum being covered with very dense pubescence, which is continued on the suture, and by its general pubescence being more sparse.—E. C. R.

*On the spinning of the larva of Balaninus brassicæ, Fab.*—On a previous occasion (Ent. Mo. Mag., vi, p. 137), I gave some particulars of the life-history of this beetle, mentioning *inter alia*, that the full-fed larva usually *drops* to the ground to form there its earthen cocoon, coated inside with silk, but that in some instances the larvæ contented themselves with fabricating an umbrella-shaped silken roof, underneath which the sculptured pupæ rested without the additional protection of an earthen cocoon. I had over and over again observed these full-fed beetle-larvæ quitting the galls of *Nematus Vallisnierii*, Hart., and simply falling to the ground. They are very plentiful on some old trees of *Salix fragilis* in the garden here, and having often watched their proceedings, I concluded that a "culbute" was their only way of reaching their end. In this I find I am mistaken; as, a little before eight o'clock in the morning of the 25th October last, I found the amber-coloured grub of this weevil suspended by an almost invisible silken thread, seven feet in length, and attached to the leaf of an overhanging bough. A slight breeze kept the curved larva swinging to and fro, which motion first directed my attention towards it. It was then about three feet from the ground, but, while I kept watching, it descended that distance, and then cut the cable. It had, however, given me time enough to trace the thread with my lens from its buccal organs up to the leaf whence it had started, and which, as I expected, showed its freshly gnawed exit-hole in the Saw-fly gall. I was most unwilling to credit this minute curculionidous larva with the extraordinary feat of spinning which it accomplished before my eyes. Suspicious of a possible error on my part, I took the trouble, as already stated, of tracing the whole length of the thread; subsequently, I measured the distance, and found it to agree with my original estimate. The branch in question stands far out by itself and overhangs a lawn; so there was no possibility of a nearer point of attachment for the silken cord. The larva itself I have since carefully compared with my description drawn up in 1869, with which it tallies in every respect.—Albert Müller, South Norwood, S.E.: *November 1st*, 1872.

*Notes on captures of Hemiptera and Coleoptera at Deal.*—

Hemiptera.—From the 4th to 14th September, I devoted many hours to a diligent search of the sand-hills between Sandown Castle and the "Chequers," for insects of this Order; and, passing over an enumeration of the commoner species, the following seem worthy of record. Except where otherwise noted, all were found at the tops of the hillocks, among the roots of the grasses growing thickly under and among the procumbent branches of the oldest dwarf sallows or under bushes of *Hippophaë rhamnoides*, these positions being the best that could be obtained for shelter during hibernation.

*Strachia oleracea*, Lin. (4), and *Corizus parumpunctatus*, Schill. (3), by sweeping the flowers of *Pimpinella saxifraga*, abundant in the hollows.

*Eurygaster nigra*, Fab. A single specimen of the pale variety (var. *a*, *communis* [of *E. hottentotta*], Fieb.), exactly the colour of the sand.

*Pseudophlœus nubilus*, Fall. A single specimen.

*Ceraleptus squalidus*, Costa. I got a fine series of this species, hitherto very rare, only two British examples being known, and both from this locality. It is a very sluggish creature, for, while one individual was turning himself over, a *Verlusia rhombea* turned out at the same time, and ran up my arm to the shoulder. *Coreus difficilis, Vollenh.* (Tijdschr. v. Entomol. 2 ser., iv, 56, pl. 1, fig. 5, 1869), must be *quoted as a synonym of* this species.

*Neides parallelus*, Fieb. Occasional among dead grass stems under bushes. These skeleton-insects so closely resemble broken bits of grass that they would have had every chance of being overlooked if they could have restrained their feelings or had the sense to be quiet; but they began to use their spider-legs immediately, and so betrayed the presence of their bodies.

*Calyptonotus lynceus*, Fab. Occasional among the dead leaves under the bushes.

*Emblethis verbasci*, Fab. By the most assiduous searching, I could get only three of this rarity, of which the first native specimen was taken at this place last March (*vide ante* p. 4). The species is said by Frei-Gessner (Mitth. d. Schweiz. ent. Gesells. i, 308) to be found in Swiss collections under the name of *Pachymerus marginepunctatus*, Wolff, following, probably, Herrich-Schäffer's erroneous citation of the name to his figure of *E. verbasci* in the 'Fauna Germanica.' Wolff's species is quoted by Walker in his 'List' as British, but I know of no authentic example, nor record of its capture.

*Plinthisus bidentulus*, H.-S. Occasional.

*Teratocoris Saundersi*, D. and S. A single example among rushes.

Coleoptera.—*Ceuthorhynchideus Chevrolatii*. Four specimens under the leaves of *Achillea millefolium*. (I also took two at Folkestone under similar conditions).

*Aphodius sus*, Fab. About twenty flew to the light of the table lamp on one evening, and at no other time.—J. W. Douglas, Lee: *October 8th*, 1872.

*Captures of Hemiptera.*—Mr. G. C. Champion has just sent for my inspection the following species captured by him:—

*Neides parallelus*, Fieb., taken by "grubbing," at Deal, in the middle of May; evidently hibernated.

*Ceraleptus squalidus*, Costa, one taken by sweeping, in a wood near Strood, in the middle of September; a new locality for this rare species.—J. W. Douglas, Lee: *10th October*, 1872.

*Vanessa Antiopa.*—The great invasion of our East Coast by *Vanessa Antiopa* is a very uncommon event, and is to be accounted for, I think, by the very uncommon weather which prevailed at the time. I consider the inference drawn by Mr. Stainton that the invaders are natives of Norway to be true.

A very strong north-easterly wind prevailed during August and the first six days of September, quite sufficient to carry these strong and large-winged Butterflies across the North Sea in about fifteen hours.

Rösel, of Nuremberg, who reared this species 130 years ago, mentions only willow as the food.—T. Chapman, Glasgow: *October 16th*, 1872.

*Vanessa Antiopa.*—With reference to Mr. Stainton's remarks on *V. Antiopa* in the Ent. Mo. Mag. for October last, I may mention that the insect was taken at Uckfield, in this county, by a gentleman, under circumstances which lead me to suppose hibernation was in contemplation.

On Friday last, the 11th October, my friend was standing in a timber-yard about 12 at noon. The day was clear, the sun shining, and the air, although not cold, was crisp and autumnal. In the yard there was a hump of oak-chips, three or four feet high, placed under an oak tree. The gentleman noticed a butterfly, which did not seem familiar to him, hover two or three times in a sluggish manner about, or fly round, this lump of chips, and as many times settle on it. Then he saw the insect crawl between the chips into the lump, on the side on which the sun was shining. He carefully removed the chips and found *Vanessa Antiopa*, apparently in a state of repose, on a small chip about a foot inside the lump. It was a good specimen, but seemed in a semi-dormant state, and was secured without difficulty.

The border certainly is not white, but has a yellowish tendency. At the tip of each hind-wing the margin is decidedly yellow.—A. J. HAY, Steyning, Sussex: *October 18th*, 1872.

*Vanessa Antiopa*.—The following additions to the record of appearances of *Vanessa Antiopa* this year, contained in last month's "Entomologist's Monthly Magazine," may be welcome, and would seem to corroborate the hypothesis you have broached as to the origin of the numerous examples observed.

On 29th August, my friend, Mr. Robert Hind, of this city, took one off the summit of one of the palisades in front of the County Lunatic Asylum in Bootham here. Not being at all prepared for introduction to so distinguished an individual at such a place and time, he had to trust to finger and thumb for securing it, and succeeded, though with some detriment to its beauty.

On 17th September, being at Muston Lodge (about 1½ miles West of Filey), I saw one in the bright sunshine, about nine a.m., sailing gracefully along the summit of a belt of rather lofty trees, which enclose the lawn and garden in front. Its peculiarly stately, gliding motion first attracted my attention. I took it for a bird unknown to me. I lost sight of it for a few moments amongst the foliage; it presently re-appeared, and I then saw it was a butterfly. In its progress round, it descended low enough to enable me to identify, but, to my regret, not to capture it; and I saw it glide away not without some admixture of pleasure in the disappointment at its evasion of the fate to which I would have liked to consign it.

On the 19th September, our venerable friend, Mr. Thomas Allis, more fortunate than myself, captured one in his garden at Osbaldwick (1½ or 2 miles from York), which he has appropriately added to the rich collection of his late lamented son (T. H. Allis), so munificently presented by him to the Museum of the Yorkshire Philosophical Society. Mr. Allis had to improvise a net,—*Vanessa Antiopa* loitered long enough for this, and its capture was accomplished. This, for a veteran naturalist in his 85th year, is a noteworthy performance.

One has also been captured at Selby, another was seen by a lady at Bridlington, and Mr. McInnis, of Beverley, informs me that several (5 or 6) have been seen or taken at and near that town.

Thus eight or ten examples at least, all occurring on or near the East Coast of Yorkshire, may be added to your list.

Mr. Allis' specimen has the *white* border. It is rather smaller than the average of some foreign examples in my possession. The one I saw appeared to me to have the border *white*.

Young collectors may derive encouragement from our venerable friend's experience, and indeed from my own. Having followed the pursuit for a period of 42 years or thereabouts, without once seeing an individual at large or alive, I had ceased to hope that the pleasure of seeing one would be vouchsafed to me.

Notices of some of the above may reach you from other sources, but lest they should not, I thought it worth while to send you a record of them.—J. Birks, York: 18*th October*, 1872.

*Vanessa Antiopa.*—This was the first insect I ever bred in America, as far back as 1861. It is quite common here during some years, and I have known the worn and *faded*, spring specimens, which had hibernated, to congregate in considerable numbers (in one instance round a barn). Its favourite food-plant here is willow, and I have usually found it within arms' reach. It is also found here on elm, birch, Lombardy-poplar, and silver-leaved poplar.

It is double-brooded; the first brood of larvæ appearing late in May and early in June, and the second brood in August. We have them with the border of the imago of all shades, from white to deep yellow. I was always under the impression that the white was merely a fading, as I have never noticed it on newly bred specimens. I could hardly believe that an imago taken in August had hibernated.

In 1870, the larvæ were very numerous around Boston, Mass., during the month of July, stripping the elms and willows.—C. V. Riley, St. Louis, Missouri: *October*, 1872.

*Syntomis Phegea.*—Several years ago, my late friend, Thomas Henry Allis, sent me a specimen of this insect for examination, which he found in the possession of a collector in the North of England, who assured him he captured it in Yorkshire, but I do not recollect the exact locality. It had evidently been on the wing for some time before it was captured, and it is not very probable that such a worn specimen would have been sent as a type from the continent.—Henry Doubleday, Epping: *December* 13*th*, 1872.

*Note on the larva of Acronycta alni.*—I found a larva of this species in Dunham Park on the 20th of July last; it was about three-eighths of an inch in length, destitute of clavate hairs, with about three of the front segments of a cream colour mixed with chocolate, the next six all chocolate, and the remainder chocolate and cream colour. After its first and second moults, it had six clavate hairs just behind the head, and the colour remained much as before. The third cast was to a gayer attire, as it then became black, with thirteen yellow transverse bands, one on the middle of each segment extending almost to the spiracular lines; the first segment had six clavate hairs placed transversely behind the head, the second and third segments were destitute of clavate hairs, the fourth to the thirteenth had each two clavate hairs, sub-dorsal in position. It was about one inch and a half in length, when it again cast its skin, and exposed six parasitic Dipterous pupæ, instead of the wished for single Lepidopterous one.—Joseph Chappell, 1, Naylar Street, Hulme, Manchester: 26*th October*, 1872.

*Natural History of Celæna Haworthii.*—Beyond the very brief note by the late Mr. R. S. Edleston of Manchester, in the 'Zoologist,' No. clxxii, I am not aware of any published account of the larva of this species; and, having had a great desire to become acquainted with it ever since I read that note, and having corresponded with Mr. Edleston on the subject, I at last found a friend who could help me to my object in Mr. James Batty of Sheffield. From him I received on the 21st of last July four larvæ, which he had taken from *Eriophorum vaginatum*. They were found feeding a little above the root-stocks growing in a damp soil on wild moorland; and Mr. Batty kindly sent a large tuft of the growing grass, which sufficed for bringing the larvæ to full growth.

Of the four larvæ, one was evidently diseased, as it died on the evening after its arrival, but the remaining three were lively and fed well; and, as one of them seemed to be full-fed by the 25th of the month, I then kept it apart from the rest, and saw it was beginning to spin up on the same evening: on the 31st, I made an examination, and was glad to observe it in the pupa state, reposing in a perpendicular position within a slight cocoon composed of a few silken threads of rather open work, holding around it some gnawings of grass and a little frass, and situated amid the sheaths of the grass shoots. The perfect insect (a ♂) came forth on August 15th; but, unfortunately, the tuft of grass grew mouldy, and thus the other two never reached the imago state.

The full-grown larva was three-quarters of an inch in length, and of moderate stoutness, cylindrical in character, except that the thickest segments were the third and fourth, the body tapering from them to the head, which was the smallest, and again behind most gradually and slightly to the rounded anal tip, the plate on which was flattened, and rather depressed in the middle, having a slight marginal ridge behind.

The colour of the head, the plate next to it, as well as that on the hinder segment, was pale reddish-brown, and highly polished, while the plate on the second segment was margined in front with dark brown; the mouth and ocelli dark brown; the body of a middle tint of purplish brown above, and paler below the spiracles, including the belly and legs, the skin though smooth, quite without gloss; a dorsal fainter paler line was visible chiefly at the end of each segment; the sub-dorsal stripe a little more distinct and paler; the round tubercular warty spots were all very dark brown and shining, each being furnished with an excessively fine short brown hair; the usual trapezoidal series on the back, gradually decreasing in size from the fourth to the eleventh segment, were more conspicuous on the thoracic segments, for there they were transversely oval in form, as they also were on the twelfth and on the front sub-division of the thirteenth, and considerably enlarged on these last; most of the spots along the sides were round, a small one a little above and a large one a little behind each black spiracle, while lower down towards the belly were two more in a line with each other parallel to the line of spiracles; those on the sides of the third and fourth segments were larger and somewhat of a drop shape, the largest being behind, below them were three others, smaller, forming a triangle on each of those segments; the side spots were also enlarged on the twelfth and thirteenth; the hind ridge of the anal plate and the tips of the ventral legs were dark ochreous-brown.

The above description exactly suited to the three healthy larvæ, and also to the sickly one as far as details went, but the colour of the skin of that larva was pale greyish.

The pupa was half an inch in length, moderately thick in proportion, widest across the thorax, and from thence diminishing a little towards the blunt and rounded anal extremity, which was furnished with two sharp bristle-like spikes meeting near their points; the wing-cases were well defined, but not very projecting: its colour at first was a light reddish-brown which changed gradually afterwards to darker brown, the abdominal divisions a little paler than the rest and with little gloss, the other parts being highly polished.—**William Buckler**, Emsworth: *October*, 1872.

*Description of the larva of Eubolia lineolata.*—A specimen of this insect which I captured on the Cheshire sand-hills in the early part of April last deposited a few eggs. They were in little clusters, each batch containing eight or ten eggs; their colour was at first pale yellow, but soon changed to bright ochreous-brown. On April 30th, they had become slaty-brown, and on the following day the young larvæ emerged, their colour orange, tinged with green. They fed readily on *Galium saxatile*, though *Galium verum* is probably their natural food, as it grows abundantly on the sand-hills. On June 8th, I took down a description as follows:—Length about seven-eighths of an inch, slender, and of nearly uniform width throughout. Head a little broader than the second segment and slightly notched on the crown; the face rather flat. Body cylindrical and very slightly attenuated from the 11th to the anal segment. Skin tough, along the sides and at the segmental divisions rather wrinkled.

Ground colour pale olive-green, at and on each side the segmental divisions pink; head greenish-yellow, spotted with black. Dorsal line dark green, and there is a still darker and much broader smoky stripe above the spiracles; between this stripe and the dorsal line are two faint waved olive-brown lines. The ventral surface is bright yellowish-green, with paler central stripe; the segmental divisions sulphur-yellow. The larvæ went underground and changed to pupa about the middle of June; the latter is about a quarter of an inch in length, smooth and shining; very dark brown, with the abdominal divisions pale brown.—**Geo. T. Porritt**, Huddersfield: *October 17th*, 1872.

*Notes on forcing Acidalia larvæ.*—Last year, having succeeded in forcing the larvæ of *Acidalia strigilata* by placing them in a greenhouse, I was induced this season to try the experiment with other larvæ of that genus; and, as it has proved a success, I venture to send a few notes as to the mode of treatment.

I feed the larvæ up in the usual glass cylinders, placing calico round them to exclude the sun's rays, which, reflecting through the glass, would no doubt quickly kill the larva and wither the food-plant. As soon as the larvæ are about to assume the pupa state, I place mould in a saucer, and, to prevent it becoming saturated with moisture from the evaporation of the water beneath, I slightly raise it to admit a current of air passing beneath, and also place a block of wood in the centre, with a hole through it to admit a plant. It is essential to do this, for, if the plant come in contact with the mould, dampness is diffused through it in a very short time.

The following are the particulars of the species bred:—*Acidalia strigilata;* from twenty larvæ reared seven moths, which appeared from 21st September to 20th October, 1871, the remaining larvæ hibernated. *A. trigeminata;* bred a number of moths from 26th August to 20th September, no larva hibernating. *A. emutaria;* from twelve larvæ bred ten moths, which appeared from 27th August to 1st September, the two remaining larvæ hibernated. *A. holosericata;* bred several moths from 7th to 20th September, no larva hibernating. All the above were fed upon *Polygonum aviculare*, which, fortunately, stands the heat well.

I may add that I have tried the experiment with several of the hibernating larvæ of the butterflies, and also of the *Bombyces*, but have failed in every instance.—A. H. JONES, Shrublands, Eltham: *2nd October*, 1872.

*Note on Endopisa nigricana.*—At the end of July last, I collected a number of pea-pods containing nearly full-fed larvæ of *Endopisa nigricana (pisana)*, and looked to breed moths from them next summer. I was, therefore, much surprised to breed six specimens last month (August), two ♂ and one ♀ on the 19th, and three ♀ (one each day) on the 20th—22nd. They were not artificially forced forward, but were kept in a fireless room facing the north, and with the window always open.

I have failed to find any record of this insect attaining the imago state within three weeks from its larval condition, as it did in this instance.—J. E. FLETCHER, 9, Pitmaston Road, Worcester: *September 16th*, 1872.

*Answer to Mr. Ritsema's "Note on Crinodes Sommeri," &c.*—Before answering the more revelant remarks in Mr. Ritsema's notice, I would (*apropos* of the first paragraph) remind him of a common proverb, which in Germany runs somewhat as follows:—"Der in einem Crystal-palast wohnt, darf keine Steine werfen." A simultaneous attack upon a new genus, in two different Magazines, is calculated to impress one with the idea that the discoverer of the supposed error must have been anxious that his acumen should be widely recognised: as an answer to the entirely unwarranted supposition contained in the said paragraph, I need merely inform Mr. Ritsema of one or two facts, which, had he studied my writings, he might have discovered for himself. Hübner's 'Sammlung' has been almost constantly on my table for the last seven years, and I know his figures as well as I know my own.

I do not make a practice of hunting up every conceivable resemblance in pattern between a new genus and those previously figured in works known to me; I content myself, at most, with a structural comparison between closely allied forms.

I did refer in my paper to the genus *Dudusa* (inadvertently written *Duduna*), a group to which *C. Sommeri* probably belongs*; I had examined two species of this genus, and therefore could speak with confidence of its relationship to *Tarsolepis*.

If Hübner was not attached to the "type system," there is no reason why *C. clara* of Cramer should not stand as the type of the genus *Crino* quite as much as *C. Sommeri*.

The remainder of Mr. Ritsema's remarks being to a great extent based upon suppositions, I shall content myself with answering his direct statements. He says that the anal tuft entirely covers the sexual organs; this is not the case with any of the specimens which I have examined, whether of *Crinodes*, *Dudusa*, or *Tarsolepis*.

As to the probability of a long curved brush of carmine hairs being concealed about the body of a *Crinodes*, it is to my mind more preposterous than it would be, were our discussion respecting the identity of the Phillippine *Eusemia bambucina* and the South American *Limnas zoega*, to suggest that the difference consisted in the *Eusemia* having concealed the red spots towards the base of the wings.*

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* *The females of Dudusa* have a zone of spatulated scales round the tail, but of only half the *length of those in the males*; the antennæ are moderately pectinated, but there are no tufts of *long hairs at the base of* the abdomen in either sex.—A. G. B.

If the size of the body is dependent upon sex, it is evident that *C. Sommeri* must be a male; but, as Mr. Ritsema is avowedly working principally with Mr. Snellen's male, which agrees in all the most important characters with Hübner's figure, it does not signify to what sex the type of *C. Sommeri* belongs: it now seems highly probable that Mr. Ritsema has the Hübnerian species, and it is more evident than ever that I have not.

The inaccuracies stated to exist in Hübner's figures are easily explicable when we know that figs. 1 and 2 represent the opposite surfaces of *C. Sommeri*, and that in fig. 2, hardly any of the inner margin is visible, so that it is impossible to decide whether it is waved or not.

I have now no more to say on this subject until I have seen Hübner's type: if the two genera come from Java, they will probably add another to the numerous illustrations of mimetic analogy already on record. I shall not, therefore, until I have proof of some such interesting fact, by a comparison of the actual type with Javanese specimens, encroach further upon the patience and good humour of the readers of this Magazine.—A. G. Butler, 17, Oxford Road, Ealing: *Dec. 5th*, 1872.

[This controversy must now cease.—Eds.].

*New sugaring lamp.*—It may interest those who do much in sugaring to hear that I have lately had a new lamp constructed, which has answered admirably. It is easily trimmed without soiling the fingers, burns with a bright white light, and is in every way far more cleanly than an oil lamp.

It was made for me by Messrs. Hinks and Son, Birmingham, the lamp being a "sponge spirit" one, burning benzoline. The wick is round, and is lengthened or shortened by means of a rack and pinion with a milled head. Altogether it is a great success.—Geo. Norman, Cluny Hill, Forres, N.B.: *November*, 1872.

*Haggerstone Entomological Society.*—The fifth Annual Exhibition of the above Society took place at the Society's Rooms, 10, Brownlow Street, Haggerstone, on the evenings of Thursday and Friday, November 14th and 15th, when, in spite of the extremely inclement weather, there was a very fair attendance of visitors: the exhibition, if not excelling, being in no respects inferior to those of preceding years.

Amongst the many rarities exhibited, were specimens of *Vanessa Antiopa* (eight, taken this season), *A. Lathonia*, *C. fraxini*, *Z. meliloti*, *N. albulalis*, *C. erythrocephala* (var. *fulva*), *D. galii*, *A. Selene* (remarkable var.), *C. dominula* (black var.), *C. caja* (black var.), &c., &c. A novel feature in the exhibition was contributed by Mr. E. G. Meek, and consisted of a complete set of entomological apparatus. Mr. F. Bond also very kindly lent several cases of extraordinary varieties from his extensive Ornithological collection; Dr. Knaggs exhibited several interesting microscopic objects, illustrative of the difference on the scales of various genera of Butterflies; and Mr. Cooke, with his usual kindness, contributed several large cases of magnificent exotic *Lepidoptera*, which excited great admiration.

Entomological Society of London, 18*th November*, 1872.—H. W. Bates, Esq., F.L.S., &c., in the Chair.

N. Greening, Esq., of Warrington, was elected a Subscriber.

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* In other respects, these two insects are as much alike as in most cases of actual mimicry.—A. G. B.

Mr. S. Stevens exhibited the specimen of *Vanessa Antiopa* captured by Mr. Hewitson near Weybridge on the 1st November, as recorded by Mr. Hewitson in this Magazine.

Mr. Howard Vaughan exhibited the example of *Crambus verellus* captured by Mr. C. A. Briggs at Folkestone, also recorded in this Magazine.

Mr. Meek exhibited *Nephopteryx argyrella*, a species of *Phycidæ* new to Britain, said to have been captured by Mr. Button near Gravesend. He also exhibited varieties of several species of British *Lepidoptera*.

The Secretary read a letter from Mr. A. R. Wallace concerning the ravages committed in Dr. Spence's collection of South American mosses and lichens by some small insect, which, according to the exuviæ, was probably some species of *Tineina*.

Mr. Meldola exhibited a beautiful drawing of the dark variety of the larva of *Acherontia Atropos*.

Mr. Müller read notes on the entomological papers contained in the 'Abhandlungen der schweizerischen naturforschenden Gesellschaft' from 1823 to 1864.

Mr. W. A. Lewis read a paper intended as (in part) a reply to that read by Mr. Dunning at the previous meeting, in which he stated that the difference between Mr. Dunning and him was entirely one of words, and repeated his charges against Dr. Hagen.

*2nd December*, 1872.—Prof. Westwood, M.A., F.L.S., President, in the Chair.

The following gentlemen were elected:—M. Henri de Saussure as Honorary Member; M. E. Pictet as Foreign Member; and Messrs. A. Phipson and G. W. Bird as Ordinary Members.

Prof. Westwood exhibited a drawing of a variety of *Pyrameis cardui* captured many years since by the late Mr. Desvignes on Margate sands. Also drawings of *Strepsiptera* intended to illustrate Mr. S. S. Saunders' recently published work on those insects.

Mr. Bond exhibited a specimen of *Lycæna Ægon* having the right-hand wings plain brown, and those on the left-hand blue; at first sight it had the appearance of a hermaphrodite, but was, in reality, a female combining the two forms of that sex: also varieties of *Notodonta dodonea*, *Acronycta megacephala* (black), and *Miselia oxyacanthæ*. He further exhibited a fine new British species of *Ichneumonidæ* (*Anomalon fasciatum*) bred by Mr. Mitford from the larva of the supposed variety of *Lasiocampa trifolii* from Romsey.

Mr. F. Smith, in answer to a question put to him by Major Munn as to "whether Queen-Bees ever sting," stated that he had never been stung by one, and Prof. Westwood said this was also his experience.

Mr. Champion exhibited specimens of *Thyamis distinguenda*, Rye, and *Lithocaris picea*, Kraatz, recently described and noticed in this Magazine.

Mr. Müller read notes on the manner in which the ravages of a *Nematus* on *Salix cinerea* are checked by *Picromerus bidens*, L.

Mr. Dunning read supplementary notes on the genus *Acentropus*.

Mr. F. Bates communicated Descriptions of new species of *Heteromera* belonging to the family *Tenebrionidæ*.

Mr. Baly communicated the first portion of a Catalogue of the *Phytophaga* of Japan, in part drawn up from the materials collected by Mr. George Lewis.

Mr. Trimen communicated a paper on new species of South African Butterflies; the insects were exhibited.

## NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 5).

BY F. BATES.

### ULOMIMIMUS, *nov. gen.*

At once to be distinguished from *Antimachus* and *Uloma* by the anterior tarsi being dilated and clothed beneath with a brush of dense, short hairs, the penultimate joint much smaller than the preceding; and by the anterior tibiæ being strongly triangularly dilated, and furrowed above for the reception of the tarsi in repose. Mentum cordiform, densely pilose; last joint of labial palpi elongate-oval, slightly attenuate at apex, that of the maxillary elongate-triangular, and obliquely truncate at apex; antennæ short, joint 3 longer than the following, 5—10 more or less transverse, perfoliate, equal at each side of the antennal axis, the 11th very large, rounded; head immersed in the prothorax to the hind margin of the eyes, nearly concealing the neck; labrum strongly transverse, slightly emarginate in front, the angles rounded; epistoma produced beyond the level of the insertion of the antennæ, emarginate in front, the angles rounded, the suture well marked by an impressed line angular at the sides; prothorax a little wider than long, moderately convex, sides rather sharply contracted in front, widest before the middle, thence gradually narrowed to the base, apex rather strongly (and slightly sinuously) emarginate, front angles prominent, base almost squarely truncated, the hind angles forming obtuse angles, faintly margined at the base and apex (obsoletely so at the middle of the latter), more strongly at the sides, without pit or excavation anteriorly; scutellum large, triangular, the sides sinuous; elytra but little wider at the base than the base of the prothorax, moderately convex, sub-parallel, base slightly emarginate, humeral angle distinct; epipleural fold entire, but very narrow behind; legs robust, the four posterior femora compressed; tibiæ strongly compressed, the anterior strongly and sinuously dilated from near the base to the apex—which is four times the width of the base; superiorly, at the inner side, channelled for the reception of the tarsi in repose, the apical half densely pilose within, the outer margin entire (*i. e.*, neither dentate nor serrate), longitudinally keeled on the under face, the keel raised up in the middle into a broad pointed tooth, exterior to this keel the under-surface is studded with short, spine-like teeth, which, close beneath the margin—both lateral and apical—are equidistantly ranged in line; the four hind tibiæ are triangular, the outer apical angle' produced; excepting at base and apex, they are closely and coarsely punctured and hispid, inner margin ciliate with long hairs; spurs robust, the inner one nearly double the length of the outer: anterior tarsi expanded, pulvillate beneath, pilose at the sides and more sparingly so above, the penultimate joint much smaller than the preceding; the four posterior somewhat elongate, slender, pilose, the penultimate joint smaller than the preceding, the 1st joint equal to the last in the intermediate, longer than the last in the posterior; mesosternum strongly declivous; prosternal process declivous behind, the apex slightly recurved: intercoxal process sub-truncate at the apex.

This genus would seem, in a measure, to form the passage between *Alegoria* and the *true Ulomides:* it should, I think, be placed between *Alegoria* and *Antimachus;* this would necessitate a slight modification of Lacordaire's arrangement of the genera.

U. INDICA, *sp. n.*

Oblong, sub-parallel, moderately convex; brownish-black, shining, the mentum, antennæ, palpi, tarsi, labrum, and margins of epistoma ferruginous, the legs chestnut-red: head coarsely and closely reticulate-punctate; prothorax punctured—sparsely on the disc—the punctures large, deep, rounded, and partly filled in with an apparent exudation of an ashy tint; scutellum smooth: elytra with nine (including the extreme marginal one) fine but deep striæ, and a short scutellar one, the striæ punctured (the punctures being much wider than the striæ, the elytra appear crenulate-striate), the 4th and 5th striæ shortest and united at some distance from the apex; intervals convex posteriorly, very minutely and sparsely punctured; pro- and meso-sterna, flanks of pro- and mesothorax, and base of epipleural fold, strongly and closely punctured; metasternum, abdomen, and femora sparingly punctured, abdominal joints rugulose at the base. Long. corp. 4 lin.

*Hab.:* East India; one example.

The peculiar punctuation of the prothorax, as described, contrasting with the rich shining brown-black of the surface, imparts quite a marked character to this species.

NOTE.—*Alphitobius* (*Heterophaga*) *lateralis*, Bohem., belongs to the genus *Eutochia*, Le Conte.

## SPILOSCAPHA, *nov. gen.*

Near *Scaphidema:* differs in having the head longer, sub-trapezoidal (not rounded) in front; the eyes narrower, laterally more prominent; labium shorter; mentum much shorter, transverse; last joint of maxillary palpi stouter, sub-securiform; antennæ much stouter, joint 3 decidedly longer than 4, 5 to 10 strongly transverse, more compact, less triangular; prothorax rounded at the sides, less contracted in front, anteriorly compressed, the fore angles less prominent, more depressed; the sterna more prominent and convex; the *prosternum compressed* in front before the coxæ; prosternal process *more prominent behind*, the lateral edge not reflexed or thickened;

mesosternum more vertical, and more clearly and deeply excavated in front, more closely receiving the prosternal process; intercoxal process not quite so broad, the apex less broadly truncated, situated on a lower plane than the metasternum.

The above differential characters will amply suffice to distinguish this genus from *Scaphidema;* and from all the other genera of the sub-family it may be at once distinguished by its broad, truncated intercoxal process.

S. CRASSICORNIS, *sp. n.*

Oval, sub-depressed, testaceous-red, shining; antennæ, save the basal joints, shining black; head entirely red, a slight impression at each side the front, rather strongly punctured, slightly rugosely so behind; prothorax finely punctured, with four large black spots, two at front, at each side the middle, somewhat triangular, and two squarer, at each side the middle of the base,—these are more or less broadly united two by two, leaving a somewhat triangular space at the sides anteriorly, and enclosing a discal space of a pentagonal form, its apex directed to the front; the reflexed margins entirely testaceous-red; elytra rather strongly seriate-punctate, the intervals very finely and sparsely punctulate, having a large black patch at each side the scutellum, another, smaller, on the shoulder, and two broad, transverse bands, one median, the other sub-apical, neither of which extend to the suture; reflexed margins entirely testaceous-red; under-side, mouth organs, and legs shining reddish-brown; ordinarily, the sterna are entirely deep black, but in one of my examples the prosternum is reddish-brown. Long. corp. 2⅛ lin.

*Hab.:* Sydney, New South Wales; four examples.

*Platydema thallioides*, Pascoe, from the description, should be very near to, if not identical with, this species.

HOPLOCEPHALA AMAZONICA, *sp. n.*

♀. Shining reddish-brown, epistoma (entirely), head in front, and legs ferruginous; antennæ and mouth organs ferruginous-yellow; head rounded in front, rather strongly and very closely punctured, front with a well-marked triangular depression, a small tubercle within, and close to, each eye; prothorax angular at the sides, *i. e.*, rapidly expanded to the middle, or very slightly beyond, thence abruptly, but rather more curvedly, contracted to the hind angles, which are rounded; elytra distinctly transversely rugulose. Long. corp. 2¼ lin.

*Hab.:* Santarem, Lower Amazons; one example, ♀.

Differs from *H. armata* (Cast. and Brullé) by the lighter colour, the stronger and much closer punctuation on the head, the well-marked triangular frontal depression, the somewhat differently formed prothorax,* and the more decidedly transversely rugulose elytra.

I have not seen *H. Hoffmansegi*, C. and B., but, as its describers state the head to be finely punctured, and the colour entirely brown, it should be a different species from the present one.

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* In *H. armata* the sides of the prothorax are expanded from the apex to decidedly beyond the middle, and from thence are broadly rounded to the base, almost completely effacing the *hind angles.—F. B.*

H. **castanea**, *sp. n.*

♂. Entirely glossy castaneous, the prothorax more or less dappled with dusky-black; antennæ, legs, and organs of the mouth yellowish-ferruginous; head finely and sparsely punctured, horned (and epistoma tubercled in front) as in *H. armata;* prothorax very minutely and distantly punctulate; the punctuation on the elytra is similar to that on *H. armata*, but much fainter and more dispersed; pro- and meso-sterna as in *H. armata.*

In the ♀ the horns are represented by two large broad tubercles, there is also a strong foveate depression on the middle of the crown, and the epistoma is simple.

Long. corp. 3¼ lin.

*Hab.:* New Granada; two examples, ♂ and ♀.

Differs from *H. armata* by its larger size, lighter colour, and much finer and more sparse punctuation.

H. **lateralis**, *sp. n.*

♂. Glossy, prothorax and scutellum rufo-castaneous, the former dappled with dusky-black, having the appearance of polished mahogany; elytra pitchy-black, with the margins, base, and for one-third the length of the suture, rather broadly rufous; head rounded in front; antennary orbits slightly reflexed; epistoma not reflexed—and with two conical tubercles—at the front; horns rather slender, sub-cylindric, distant at the base, directed forwards, slightly arched, slightly convergent; the head, between the horns, is slightly concave, the usual deep, rounded excavation on the middle, behind the horns, is in this species wanting, or is only slightly represented by a faint, rounded depression; the eyes are less prominent than usually obtains in this genus, and are somewhat narrowed posteriorly, above, by a slight expansion of the cheeks,—they are thus intermediate in form between typical *Hoplocephala* and *Evoplus;* prothorax moderately convex, arcuate-emarginate in front, fore angles distinct, sides almost regularly rounded, more contracted at apex than at base, indistinctly, minutely, and distantly punctulate, a foveate, punctured, sub-marginal depression at each side, near the middle; elytra seriate-punctate, intervals rather broad, flat, smooth, indistinctly pnnctulate; under-side dull red, mouth organs and legs clear red, antennæ darker; prosternal process lanciform, terminating behind in a slightly recurved point; mesosternum in front sub-horizontal, sub-vertical, deeply and clearly excavated.

♀. Epistoma simple, horns represented by tubercles, eyes (above) broader, not contracted behind by an expansion of the cheeks, the punctured fovea at each side the prothorax obsolete.

Long. corp. 4 lin.

*Hab.:* "Colombia;" two examples, ♂ and ♀.

A very distinct and handsome species, and remarkable by the ♂ not having the usual deep excavation on the vertex.

Note.—*Hoplocephala (Neomida) baladica, elongata (= sulcata)*, and *striata*, Montrouzier. These three species, as represented in the Collection Doué, belong:—the 1st to the *Helopides*, and is identical with *Strongylium viridipenne*, Mont.; the 2nd also belongs to the *Helopides*, near (I think) *Isopus;* and the 3rd is a *Platydema.* Judging from description, *Platydema oriticum*, Pascoe, = *P. striatum*, Montrouz. I have received this species from New South Wales, as well as from New Caledonia.

*Leicester: December*, 1872.

# A LIST OF *ENDOMYCHIDÆ* COLLECTED IN JAPAN BY GEO. LEWIS, ESQ. WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

BY THE REV. H. S. GORHAM.

Among the insects collected by Mr. G. Lewis in the Japan islands are a few *Endomychidæ*, of which six species appear to be new, and not very close to anything known, and two, as I apprehend, pertain to new genera.

The following is a complete list of the species observed.

## ENDOMYCHIDÆ.

### *Trib.* II.—*DAPSINI.*

ANCYLOPUS, Costa.

ANCYLOPUS MELANOCEPHALUS, Oliv.

This widely spread species extends from Sicily, through Africa, the East Indies, and Malay Isles, to Japan.

"In rubbish heaps, common in all the islands; generally in great profusion."

CONIOPODA, *g. n.*

*Gen. Lycoperdinam simulans, sed antennarum clava triarticulata, coxæ anticæ a prosterno separatæ, et elytra pilosa.*

CONIOPODA ORIENTALIS, *sp. n.*

*Ovata, ferruginea, parce pubescens antennis pedibusque nigris; his femorum basi, tarsisque rufis: scutello transverso, triangulari.*

*Long. corp. lin.* 1½—1¾.

*Caput parvum, oculi fortiter granulati, antennæ et tuberculis inter oculos et ad corum marginem contiguis exortæ; articulo tertio secundo paulo longiore,* 4—8 *sub-æqualibus, quadratis,* 9, 10, 11 *his duplo latiores. Thorax fere transversus, angulis anticis deflexis, posterioribus acutis, striâ marginali integrâ, sulcis basalibus brevibus fortiter impressis; medio leviter punctatus. Elytro apicem versus attenuata, pube brevi concolore parce vestita, leviter crebius punctata, apice striâ suturali medio haud attingente. Pedes nigri, femorum basi tarsisque rufis, tibiis piceis, basi apiceque dilutioribus.*

Two specimens; Hiogo. "Distributed in Nipon and Kushiu."

I have a specimen differing but slightly from the above insect, labelled (as from North America), "*Epipocus ferrugineus,*" which is, however, neither an *Epipocus* nor a *Lycoperdina.*

LYCOPERDINA, Lat.

LYCOPERDINA DUX, *sp. n.*

*Oblongo-ovata, picea, nitida, omnium parcius subtiliter punctata, thoracis elytrorumque marginibus dilutioribus, scutello transverso, antenarum articulo penultimo intus triangulariter dilatato.*

Long. corp. lin. 2¼—3.

"Frequent in puff balls under trees; Maizasau hills, Hiogo." The largest species in the genus known to me.

LYCOPERDINA MANDARINEA, Gerst.

Two specimens, ♂ ♀, with the above, and one from Nagasaki.

### SAULA, Gerst.

SAULA NIGRIPES (?).

Nagasaki. "Distributed in Nipon and Kushiu."

This differs a little from a specimen from Ceylon, the base of the antennæ are black, and the whole insect rather more shining; but I see no structural difference.

### MYCETINA, Muls.

MYCETINA AMABILIS, *sp. n.*

*Oblongo-ovata, nigerrima, nitida, elytris maculâ scutellum versùs hamatâ, duabus alteris parvis ante apicem, tarsisque rufis.*

*Long. corp.* 2½ *lin.*

*Caput crebre subtilissime punctatum, tuberculis antenniferis ad antennarum insertionem testaceis. Antennæ nigræ, articulo secundo piceo, tertio permulto breviore,* 3—5 *inter se sub-æqualibus,* 6—8 *brevioribus, latitudine haud longioribus, ultimo testaceo. Thorax fere glaber, margine reflexo, angulis posticis acutis, basi sulcis obliquis utrinque sat fortiter impressis, marginato ac depresso. Elytra creberrime, subtilissime punctata; punctis ad apicem fortioribus. Pedes femoribus leviter incrassatis nigris, apice summâ, tibiarum basi, tarsisque rufis.*

Nagasaki, in agarics rare: three examples from Ipongi; in one of these the apical spots are wanting.

MYCETINA ANCORIGER, *sp. n.*

*Breviter ovata, nigro-picea, nitida. Elytris vittâ humerali prope suturam productâ, margine tenui, apiceque indeterminate castaneis, parcius sat profunde punctatis. Antennis crassiusculis.*

*Long. corp.* 1½ *lin.*

*Caput tuberculis antenniferis et antennarum basi piceis, his articulo* $2^{do}$ *tertio dimidio breviore,* 3—5 *latitudine paulo longioribus,* 6—8 *sensim crassioribus,* 9—11 *fortiter transversis, apice summâ ferrugineâ. Thorax longitudine duplo brevior, marginatus, sulcis basalibus arcuatis. Scutellum piceum. Elytra thorace parum latiora. Pedibus piceis, genubus tarsisque dilutioribus.*

Nagasaki, with the preceding, and also at Hiogo and Yokohama.

### STENOTARSUS, Perty.

STENOTARSUS NIGRICLAVIS, *sp. n.*

*Ovatus, rufo-ferrugineus, pube brevi concolore vestitus, crebre punctatus, antennis (basi excepta) pedibusque nigris; illis clavâ brevi, articulis 9 et 10 transversis, ultimo ovato; his tarsis rufis.* Long. corp. 1½ *lin.*

Near *S. claviger*, Gerst., in the section without punctured striæ; but the antennæ have the club with joints very short for a *Stenotarsus*, and the punctuation is finer and closer than in *S. claviger*.

In rubbish heaps: probably occurs throughout the islands.

### *Trib.* IV.—*ENDOMYCHIDÆ ADSCITI.*

**PANAMOMUS**, *g. n.*

*Antennarum clava triarticulata, articulo nono decimo subæquali. Pronotum amplum, basi bisulcatâ. Coxæ anticæ contiguæ. Tarsi visibiliter 4-articulati.*

*Genus Leiesti proximus, at thorace ampliore et corpore convexiore, formâ magis Hylaiæ, distinctum videtur.*

**PANAMOMUS LEWISI**, *sp. n.*

*Oblongus, piceus, nitidus, thorace amplo, parce punctato, elytrisque apicem versus dilutioribus, pedibus antennisque testaceis.*

*Long. corp.* 1 *lin.*

*Caput parvum, epistomate a lineâ transversâ marginato. Thorax subquadratus, margine laterali sinuata, angulis anticis acutis deflexis, posterioribus fere rectis, sulcis duobus profundis, extus plicâ rectâ determinatis. Elytra striâ suturali leviter impressâ, integrâ, et seriebus sex punctorum haud conspicuis. Scutellum magnum, semicirculare.*

Nagasaki; a single example in fungoid growth on a Spanish chestnut: 1866.

Rusper, Horsham: *January*, 1873.

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## DESCRIPTIONS OF NEW SPECIES OF *COLEOPTERA* FROM CHILI.

### BY EDWYN C. REED.

**GYRIOSOMUS KINGI**, *sp. n.*

*Niger, nitidulus, sub-parallelus, sub-planatus; pronoto transverso, antice arcuatim emarginato, marginibus lateralibus reflexis, postice prope basim sulco arcuato impresso, angulis posticis productis; prosterno in medio postice producto; elytris basi punctis magnis irregularibus impressis, sulcisque latis, cinereo-pubescentibus, obliquis, ornatis.*

*Long. corp.* 16—19, *lat.* 7—9 *mill.*

Hab.: North Chile.

I have compared this insect with the fourteen species of *Gyriosomus* in the National Collection, and with the descriptions of five or six other species supposed to be Chilian, and I find it differs from them all. It was taken by Mr. Thomas King, in the dry district of Carrizal Bajo, in the province of Atacama, on the southern border of the desert.

GYRIOSOMUS AFFINIS, *sp. n.*

*A præcedente staturâ majore, corpore ovato, convexo, pronoto antice parum angustato, postice latiore, angulis omnibus productis, tantum differt.*

*Long. corp.* 20, *lat. elytrorum ad basim* 9, *pone medium* 13 *mill.*

Hab.: North Chile.

One specimen, from the same locality as *G. Kingi.*

CANTHARIS (?) PHILIPPII, *sp. n.*

*Piceus vel memnonius, capite punctato, in medio maculâ rubrâ notato; pronoto sparse punctato, rugoso, antice sulco trasverso sat profunde impresso; elytris lineis elevatis irregulariter reticulatis, areolas sat magnas includentibus, instructis; abdomine pedibusque nigris.*

*Long. corp.* 18—28 *mill.*

Hab.: North Chile.

This fine insect was also taken by Mr. King in the above mentioned district. It doubtless may be placed in the genus *Cantharis* as defined by Lacordaire (Gen. des Col. v, p. 676), although there are sufficient differences to separate it generically from *C.* (*Epicauta*) *femoralis*, Sol., the other known Chilian species.

NACERDES SAUNDERSI, *sp. n.*

*Nigra, cœruleo-micans, pubescens; capite nigro, ore rufo; pronoto rufo, maculis duabus nigris notato, postice attenuato; elytris elongatis, suturâ et utrinque vittâ marginali luteis; ventre nigro; prosterno femoribusque rufis; geniculis, tibiis, tarsis antennisque fuscis.*

*Long. corp.* 8—9 *mill.*

Hab.: North Chile.

This appears to be the same species as that described by Fairmaire and Germain (Ann. Soc. Ent. France, 1863, p. 268) as *N. Servillei*, Sol. (in Gay, Zool. v, p. 259), and, if so, it is an instance of the numerous cases in which these authors have rendered "confusion worse confounded" by trying to improve Gay's descriptions; for here they have taken an insect which cannot be of the same species as that which Solier had in view when he wrote the description alluded to.

The writings of these authors abound in errors of this description; one of the worst may be found *l. c.* 1858, p. 733, where an elaborate description of a *Stigmodera*, supposed to be *S. chilensis*, Guér., is given. This description was, however, taken from a very dissimilar species, as they themselves admit *l. c.* 1867, p. 627. I could (if it were necessary) quote more than a dozen of similar errors committed by them in their few papers on the Chilian insects.

### LISTRODERES SUPERBUS, *sp. n.*

*Magnus, ater, squamulis minimis aureis vestitus; rostro tricarinato; pronoto antice latiore, suprà plano, rugis obliquis, confusis, radiantibus, et antice carinulâ medianâ sculpto; elytris vix quam thorax latioribus, obsolete sulcatis, suprà planis, marginibus lateralibus parallelis, sulcis ante partem declivam utrinque in dentes desinentibus, elytrorum apice emarginato, sub-quadridentato.*

*Long. corp. absque rostro* 22, *lat. pronoti* 5, *elytrorum* 6 *mill.*

Hab.: South Chile.

A single example was taken some years ago by Dr. R. A. Philippi, in the province of Valdivia, and presented by him to the National Museum, with the above M.S. name; but no description of it has, to my knowledge, been yet published. Another specimen was taken by Capt. F. Vidal, of the Chilian Navy, in the province of Llanquihue, in January, 1872.

### STENOCERUS VIDALI, *sp. n.*

*Ovatus, pube corticinâ dense tectus; pronoti tergo tridentato, lineâque transversali elevatâ instructo; elytris inæqualibus, ad basim utrinque tuberculosis, tuberculis in medio excavatis, nigro ornatis, ad apicem maculâ triangulari nigrâ ornatis; prosterno nigro.*

*Long. corp.* 7 *mill.*

Hab.: South Chile.

One specimen, from Llanquihue.

**National Museum, Santiago de Chile:**
***July*, 1872.**

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## DESCRIPTIONS OF NEW SPECIES OF AFRICAN *LEPIDOPTERA*.

BY CHRISTOPHER WARD, F.L.S.

*(continued from page* 148).

### CHARAXES ANDARA, *n. s.*

♂. *Upper-side:* both wings deep black, crossed midway vertically by a white band, broadly suffused on both sides with bluish-grey; beyond the third median nervule in fore-wing this band breaks into four distinct white spots, the two upper ones curving upwards and much smaller; outer margin of fore-wing with small red spots placed between the nervures. Hind-wing with three tails, narrow and rather long, black, with bluish-white streak down the centre.

*Under-side:* resembles *C. Brutus*, but the markings generally darker, and the white band narrower and more clearly defined.

♀. *Upper-side:* as male, but with the white band broader, and beyond the third median nervule of fore-wing changing to ochreous-red; touching and beyond the extremity of cell an elongated marking, above this a triangular group of five spots, all ochreous-red, the costa edged with the same colour.

*Under-side:* resembles that of the male.

Expanse, 3 inches. Habitat, Madagascar.

### CHARAXES ANDRIBA, *n. s.*

♂. Size and form of *C. Zoolina*. *Upper-side:* ochreous-red, with apex and outer margin of both wings broadly bordered with brown, a brown spot crossing the cell of fore-wing, hind-wing with one tail.

*Under-side:* light reddish-brown, lustrous at outer margin, both wings crossed by a narrow band of darker brown, edged inwardly with silver, several small silvery markings at the anal angle.

Expanse, 2¼ inches. Habitat, Madagascar.

The upper-side of this species rather resembles that of *C. Zoolina*, whilst the under-side is near *C. Neanthes*. I have recently received *C. Zoolina* and *C. Candiope* from Madagascar, the former does not differ from the Natal examples, the latter has the apical half of fore-wing much darker than the Natal specimens, and will probably be the species recently described by M. Lucas as *C. Antamboulou*, and his *C. Antanala* is the same as *C. Cacuthis*, Hewitson.

Halifax: *December*, 1872.

(*To be continued*).

## BRITISH *HEMIPTERA*: NEW SPECIES—*HOMOPTERA*.

BY J. W. DOUGLAS AND JOHN SCOTT.

### Family.—*JASSIDA*, Stål.

### Genus.—ATHYSANUS, *Burm.*

### Species 1.—CANESCENS, *D. and S.*

Pale ochreous. Elytra ashy-grey, farinose, mostly with interrupted fuscous streaks on the nerves.

*Head* short; above, sometimes, round and *on* the anterior margin a faint fuscous line; beneath, always, a strong, somewhat broken black line round, but not on, the anterior margin. *Rostrum*, apex black.

*Thorax: pronotum* transversely crenulate, with three short, longitudinal, fuscous *lines not reaching* the anterior or posterior margin, one in the middle and one on each side of it slightly divergent posteriorly, equidistant from the middle line and the side margin. *Scutellum*, posteriorly, with a dusky spot. *Elytra* ashy-grey, farinose, the nerves interruptedly brown or fuscous, the streaks more continuous and darker outwardly than inwardly, being very short next the inner margin, disc almost, and the anterior margin wholly and broadly, clear. *Prosternum*, at the outer side, with two confluent black spots. *Legs* pale ochreous: above, *thighs*, 1st and 2nd pairs with two black spots near the apex, smaller and fainter on the 2nd pair; *tibiæ* with a black dotted line on the inner side, and distant, spinose hairs on the outer margin; 3rd pair, *thighs* with a black line on anterior edge, and a large black spot on the inner edge at the apex (or sometimes two, the upper one less distinct), the apex itself having a strong projecting spine; *tibiæ*, inner margin with a strong black line, and thickly set with short, fine, spinose, ochreous hairs; outer margin with more distant, somewhat curved, ochreous spines, each arising from a black dot; *tarsi* all ochreous, 3rd pair fuscous beneath; *claws* all black. Under-side: 1st pair, *fulcra*, a large black spot near the base; *thighs*, a longitudinal fuscous line near the anterior margin; 2nd pair, *thighs* with a transverse, geminate spot beyond the middle, and a round one near the apex, black; 3rd pair, as on the upper-side.

*Abdomen* beneath clear pale ochreous, the lower edge of each segment, next the clear connexivum, with a large, triangular black spot.

Length, 2—2¼ lines, ♂ ♀.

NOTE.—The dark markings on the upper surface are frequently in part or wholly wanting, and the farinosity extends on to the pronotum as well as the elytra.

Apparently related to *Cicada argentata*, Fab., E. S. iv, 38, 47.

A few examples taken, in July, among short grass on the Downs, Ventnor, Isle of Wight; also in August, at Birch Wood, and Sevenoaks, Kent.

### Species 2.—COGNATUS, *D. and S.*

Yellowish, or with a faint brownish tinge, slightly shining. Elytra pitchy-brown, with pale nerves.

*Head:* above, a little before the anterior margin a bow-shaped, brown streak, and behind it, in a line with the anterior margin of the eyes (which it does not reach), a broadish, transverse brown streak; near the basal angles a more or less distinct brown spot, enclosed by a curved line, exteriorly; beneath, *face* black; anterior margin, a central line, the apex and about seven fine transverse undulatory lines on each side, yellow. *Antennæ* black, or pitchy-black; 1st joint, base, and apex, pale. *Rostrum* brownish-yellow; apex black.

*Thorax: pronotum* very finely wrinkled transversely; anterior margin in the middle with a small, somewhat lunate, brown patch; from beyond the middle, and extending to the posterior margin, four brown streaks, the two exterior ones slightly diverging and terminating at the basal angles of the scutellum, the two interior are placed on either side of the centre, and are )(-shaped. Scutellum slightly *depressed in the centre*, in which is a brown *fleur-de-lis* shaped character, having the central shaft divided by an extremely fine yellow line. *Elytra* pitchy-brown, nerves yellow; *corium*—area, adjoining the clavus, pitchy-brown; in the other areas the colouring is more or less interrupted in the middle; apical areas with a spot at the base, and the margin narrowly brown. *Sternum* black; *prosternum*, lateral and posterior margins yellowish-white. *Legs* sordid yellow; *thighs*—2nd pair with a row of black spots on the upper edge; 3rd with three or four spots on the upper-side, next the apex, and on the inside, a short black streak; *tibiæ*—inner margin black, except the base; upper and lower edges of the outer margin with a row of black spots; spines stout, long, brown; apex narrowly black; *tarsi*—3rd pair yellow; 1st and 2nd joints at the apex broadly black; 3rd joint black; apex very narrowly yellow.

*Abdomen* above black, with a line down the centre, broadest at the apex; beneath entirely black; genital plates, towards the apex, brownish; *connexivum* above white; junctions of the segments narrowly black. Length, 1¾—2 lines.

Scarce. It has occurred in Scotland and Devonshire.

(*To be continued*).

## NOTES ON BRITISH *TORTRICES*.

BY C. G. BARRETT.

(*continued from p.* 130).

*Tortrix icterana.*—Altered by Wocke to *paleana*, Hübn. (1790), a much earlier name. This Professor Zeller confirms. But *paleana* is an evident misprint for *palleana,;* and Hübner subsequently sunk the name altogether. Mr. Doubleday thinks it identical with the yellow variety of *viridana* (*Suttneriana*, Schiff.). I have received from him a curious variety of this species, having *whitish hind wings.* It is found, not uncommonly, in the South of Germany.

*Tortrix viburnana*, W.V., Fab.—Wocke alters this to *viburniana*, Fab. ('Mantissa Insectorum,' 1787), but this change seems altogether unnecessary, since *viburniana* is evidently a misprint; and Fabricius himself corrected it to *viburnana* in his 'Entomologia Systematica' (1793).

The larva is sufficiently polyphagous. In addition to the food plants mentioned by Wilkinson, M. Jourdheuille gives joined shoots of *Alisma plantago*, *Ranunculus acris*, *Caltha palustris*, and *Ononis spinosa;* and Professor Zeller tells me that he has bred it from one of the *Umbelliferæ.*

*Tortrix viridana*, Linn.

*Tortrix ochreana*, Hübn.—Introduced into the British list on the authority of a specimen in the collection of Mr. P. H. Harper, which is said to have been taken in the New Forest.

This specimen I have not seen, but the description and figure of it in the 'Entomologist's Annual' for 1867 agree perfectly with German specimens sent by Professor Zeller.

If I am correctly informed, this specimen was not *captured by* Mr. Harper; and its nativity seems exceedingly doubtful, especially as Professor Zeller refers to it as a South European species. He says:—"I never saw it alive; the specimens I send are from Vienna."

*Tortrix Forsterana*, Fab. (*adjunctana*, Treitschke, and of Doubleday's List, is a name of later date).—According to Professor Zeller, this species occurs in Germany, in fir woods, among *Vaccinium myrtillus*, on which it seems to feed. With us, it especially favours ivy and privet. It is liable to great variation in size, far beyond Wilkinson's measurements. My Rannoch specimens (♂) are not more than eight lines in expanse, while a ♀ from Dublin measures an inch and a quarter.

*Tortrix dumetana*, Treitschke.—Professor Zeller tells me that this species is very rare in Germany, and that he stirred his specimens out of a thicket, at Glogau, in which was no oak.

*Tortrix heparana*, W.V.

*Tortrix ribeana*, Hübn.—In Staudinger and Wocke's Catalogue, the variety *cerasana*, Hübn., is considered as a distinct species, and Professor Zeller appears to hold the same opinion, as, indeed, any one would, looking only at the general appearance of the variety—its peculiar dull brown colour, broad fascia, and apparently broader anterior wings; but the proof of its identity with *ribeana* seems perfectly satisfactory. Guenée says "nearly all authors have given this "(*cerasana*) as a distinct species. I have seen and received many, "but they have always been varieties of *ribeana*, more or less clouded "on the disc of the wing. I have obtained both from the same "larvæ:" and Mr. Doubleday writes—"I have seen the two varieties "in copulation; these and other varieties swarm on a cherry tree in "my yard."

*Tortrix cinnamomeana*, Treitschke.—All my specimens of this species occurred among oak, and not beech, but this was in a district in which beech is rare. In Epping Forest it seems to frequent beech only.

*Tortrix corylana*, Fab.

*Tortrix transitana*, Gn.—This is *diversana*, Hübn., as corrected by Mr. Doubleday in the supplement to his List. On the Continent a much paler and clearer variety occurs, but is rare. It is dull pale ochreous with a slight olive tinge, and the markings pale olive-brown. I am not aware that this variety has been found in Britain.

Wilkinson is certainly in error in saying that this species occurs generally throughout the country, and is not uncommon. It is usually rare in this country, but Mr. Stainton tells me that in July, 1851, he found it in abundance under elm. Mr. Machin tells me that he has collected hundreds of *Tortrix* larvæ in one of its few localities, but has bred only three or four of this species from them. These fed on birch and willow. I think that Wilkinson's mistake has arisen from the fact that fine males of *T. rosana* have sometimes been mistaken for this species: *rosana* may always be known by the yellow or reddish colour of the apex of its hind-wings, which in *diversana* are entirely fuscous.

*Lozotænia sorbiana*, Hübn.—Wocke divides *Tortrix* and *Lozotænia* into five or six genera, mixing with them some sufficiently startling species from other groups, but he does not do violence to our judgment so far as to separate them into distinct *families*.

*Lozotænia musculana*, Hübn. — From the habits and general appearance of this species, I think it far more appropriately placed here than in the genus *Cnephasia*.

*Lozotænia latiorana*, Stainton.—Mr. Doubleday sinks this, in his List, as a variety of *costana*, Fab., and in this I am convinced that he is correct. In the few specimens which I have been able to examine, the form of wings is exactly as in *costana*, and precisely the markings of that species may be faintly traced in the male. I cannot see any difference in the satiny gloss of the two forms.

*Lozotænia semialbana*, Gn.—Professor Zeller tells me that he finds this species on beech.

*Lozotænia costana*, Fab.—In some parts of the country specimens are found, not uncommonly, in which the whole of the fore-wings is suffused with the fuscous or reddish colour of the fascia. In the Norfolk fens, however, where the insect is exceedingly abundant, this variety seems very rare. I have received it from Birmingham and York.

*Lozotænia unifasciana*, Dup.

*Lozotænia fulvana*, Schiff.?, Wilk.—Mr. Doubleday, in his List, *correctly* substitutes *pyrastrana*, Hübn., but this is superseded by Dr. Wocke in favour of *Podana*, Scopoli ('Entomologia Carniolica,' 1763), a far earlier name. Professor Zeller confirms this correction.

*Lozotænia piceana*, Linn.—Wilkinson merely mentions this species incidentally at the end of the genus (p. 65), but Mr. Doubleday, having faith in the one known British specimen, retained it in his List; and in July, 1868, I had the good fortune to confirm it by the capture of a specimen on the borders of Hants, as recorded in 'Ent. Mo. Mag.,' vol. viii, p. 272.

As it does not appear to be described in any English work, I append a description made (as my own specimen is also a female, and not very fine) from specimens kindly sent me by Professor Zeller:—

Head, antennæ, and palpi brown. Thorax purple-brown.

♂. Fore-wings pale pinkish-brown, with a rich purple flush; markings chocolate-brown. Basal patch distinct on the dorsal margin, but interrupted in the middle of the wing by a patch of raised pale fuscous scales, which occupies all the basal portion of the costal margin for one-third of its length. Central fascia oblique, narrowest at the costa, and emitting from its external margin a narrow crooked streak towards the apex of the wing. Above this is a slight cloud on the costa. Parallel with the hind margin is a second fascia, dilated at its upper extremity, but not attaining the costal margin. Near the anal angle is a narrow oblique streak. Cilia and hind-wings pale fuscous, with a golden flush.

♀. Altogether paler, the purple flush very faint. Markings similar to those of the male, but much broken up, and confused by streaks and dots emitted from their margins. The streak from the central fascia towards the apex is nearly obsolete, but the costal blotch above it is distinct, forming a flat triangle. The streak from near the anal angle is perpendicular, and, as well as a parallel one given off from the base of the central fascia, nearly crosses the wing, which has altogether a curious reticulated appearance from the number of faint perpendicular lines crossing the nervures. Hind-wings yellowish-fuscous, yellower towards the apex.

According to Zeller, it feeds on *Pinus sylvestris.*

*Lozotænia roborana*, Hübn.—Corrected in Doubleday's List to *cratægana*, Hübn., under which name Hübner figured the ♀ earlier in his work than the ♂ *(roborana)*.

I used to find this handsome species rather commonly in oak and fir woods on the borders of Hants.

*Lozotænia xylosteana*, Linn.

*Lozotænia rosana*, Linn.

Norwich: *December 12th*, 1872. p 266

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*Note on the occurrence in England of Clytus erythrocephalus, Fab.*—Among some British *Coleoptera* recently sent to me for names by Mr. J. Chappell, of Manchester, is an example of the above-named North American species, accompanied by the following note:—"The Longicorn was taken by Mr. Thorpe of Middleton, a Lepidopterist, about a mile or two out of Middleton, in a grassy place, at rest on the "grass." That severe scrutiny of the claims of all wood-feeders to our list is required, will, of course, be conceded by all: but I cannot refrain from observing that, supposing this species were indigenous to the European instead of the American Continent, the above evidence would certainly have warranted us in supposing it British. The species is less bulky than *C. arietis*, with longer and much thinner legs, and entirely ferruginous in colour, with the exception of four yellow bands on the elytra, which are more or less darkened apically.—E. C. RYE, 10, Lower Park Field, Putney, S.W.: *January*, 1873.

*Captures of Coleoptera in the Isle of Sheppy, &c.*—Although especially devoted to the study of *Lepidoptera*, I have for some time been in the habit of bottling any *Coleoptera* that I have met with, and which I have from time to time consigned to my friend, Mr. Champion; and, although, as might be expected, the greater number have proved to be of universal distribution, a few rarer species have occurred, of which I add a list, which may not be altogether uninteresting. Nearly all the species mentioned have been found during the past season.

In the Isle of Sheppy, I have found *Polystichus vittatus*, occasionally under stones, clods, &c., and once or twice at the roots of trees, when digging for pupæ; *Lionychus quadrillum*, rarely, in a salt-marsh; *Licinus silphoides*, several under stones on the beach, just above high-water mark; *Zabrus piger*, plentiful, running up grass-stems at dusk; *Aleochara sanguinea*, *lata* and *bilineata*, *Oxypoda Waterhousii*, *Homalota pulchra* and *cinnamoptera*, *Sunius intermedius* (very common), *Stenus ater* (not rare), *Cryptophagus affinis* (common), *punctipennis*, and *cellaris*, *Atomaria peltata* and *fuscipes*, *Saprinus rotundatus*, *Throscus obtusus*, *Apion pubescens*, &c., in stack-refuse; *Oxytelus insecatus*, *Phalacrus brunnipes* and *Humberti*, *Syncalypta hirsuta*, *Scirtes orbicularis*, *Dolichosoma lineare* (not rare, especially towards evening), *Hylastes obscurus*, *Litodactylus leucogaster*, *Sibynes primitus*, *Apion confluens*, *Bagöus inceratus*, *Erirhinus pillumus*, *Donacia dentata*, &c., by promiscuous sweeping on the tops of the cliffs, in salt marshes, on ditch sides, &c.; *Choleva morio* and *nigrita*, *Cryptophagus setulosus* (common, with swarms of ordinary species), *Triphyllus suturalis* (plentiful), *Tetratoma fungorum* and *Engis humeralis* (4) in fungi on elm trees; *Bledius spectabilis*, common, burrowing in the clay banks of brackish pools, and accompanied by dozens of *Dyschirius salinus* and a few *politus*; *Ochthebius rufimarginatus* and *Bagöus petrosus* (Walton) in refuse on ditch-banks, rarely; *Nitidula 4-pustulata*, common in a dead and desiccated gull, hung up to scare small birds, and which repaid examination for weeks, until I had quite beaten it to pieces; *Dermestes undulatus*, not rare in carcases on the beach; *Mycetophagus 4-guttatus* and *Phlœophagus spadix*, each singly, crawling on stones in the hot sunshine; *Opilus mollis* and *Clerus formicarius*, also singly, under bark; *Telmatophilus typhæ*, common between leaves of *Typha latifolia*, preferring those withered plants which had been attacked by *Nonagria typhæ*, and accompanied by a few *T. Schönherri* and *Homalota incana*; *Lucanus cervus*, a remarkably fine ♂, with enormously developed head and mandibles; *Sibynes arenariæ*, common in sandy places on the beach, under *Arenaria maritima*; *Apion limonii*, abundant at roots of *Statice limonium*, in a salt-marsh, the ravages which it commits on its food-plant being very obvious; *A. Schœnherri*; *Ceuthorhynchideus frontalis*, common on *Artemisia maritima*, along with swarms of *Thyamis absinthii*, and, very rarely, *Mordellistena pusilla*; *Ischnomera melanura*, abundant in the Dockyard, running about on wooden pavement in the sunshine; *Crepidodera chloris*, abundant on willows; *Bryaxis Waterhousii*, rare, under stones on the shore.

Near Chatham, during the past summer, I met with the following, along with many commoner species, in a "trap" formed by a wheel-rut full of water, by the side of a wood path, viz.:—*Homalota hepatica* (1), *Anisotoma dubia* and *badia*, *Cyrtusa pauxilla*, *Amphicyllis globus*, *Orobitis cyaneus*, *Chrysomela varians*, *Psylliodes dulcamaræ*, and *Mniophila muscorum*. By casual sweeping, I have taken *Meligethes umbrosus*, *Aphodius arenarius*, *Dasytes oculatus* (one ♂), *Ceuthorhynchus cochleariæ*, *Miarus graminis*, *Phytœcia cylindrica*, *Pachyta collaris*, *Mordellistena brunnea*, &c. *Baridius picicornis* was common, at roots of *Reseda lutea*, as usual; *Trachyplœus spinimanus* (not rare) and *squamulatus*, and *Syncalypta spinosa* (common), at roots of *Helianthemum vulgare* in chalky places; *Eledona agaricola*, plentiful in fungus, and *Mordella fasciata* occurred freely on umbels of *Daucus carota*, &c., one very hot day in July; I also found a few under bark of a fallen and very much decayed tree (apparently a chestnut) in company with *Cerylon histeroides*.

At Swale, Kent, by cutting tufts, &c., *Dinopsis erosus*, *Stenus ater*, and *Throscus obtusus* have occurred to me.—James J. Walker, 7, West Street, Blue Town, Sheerness: *December* 12*th*, 1872.

*Note on swarms of Bruchus.*—A ship came ashore here a few days since, laden with beans, which the people said were infested with "bugs:" so I went down to see, and found *Bruchus rufimanus* in much larger quantities than I ever saw beetles before. I was only there about a quarter of an hour, and I got over two quarts of them; they were running all over me, and when I got home and lighted the gas, numbers of them took wing, making a buzzing noise like the house-fly, and seeming to take a delight in settling on my head.—Robert Lawson, 28, Trafalgar Square, Scarborough: *November* 25*th*, 1872.

*Occurrence of Apatura Ilia in England.*—Mr. W. O. Hammond (of St. Alban's Court, near Wingham, Sandwich) brought to the Museum for determination, quite recently, a slight variety of *Apatura Ilia*, taken in the larval state by a young friend of his: finding, however, that *A. Ilia* was not a recorded British species, Mr. Hammond promised to make further enquiries, and send me precise data as to the time and place of capture; he accordingly writes (December 31st, 1872), as follows:—"I told you "that I would let you know the particulars of the specimen of *A. Ilia*, which I "brought for your inspection. It was caught in August, 1869, by Mr. Arthur "Tritton, the son of the Rector of Otford, in Kent, at Aldermaston, in Berkshire, in "the larva state, upon the oak; changed, remained a long time in pupa (how long is "not stated), and finally produced the imago which you saw. The larva is described "as pale green with yellow spots; appearance of the pupa, not remembered. If *Ilia* "is a well-determined continental species, then here is a British occurrence. But is "it not possible after all that *Ilia* may be simply a variety of *Iris*, oak-fed, while the "type is sallow-fed—why is *Iris* always about the oak-tops? I merely suggest this: "no doubt there is conclusive evidence the other way."

I think the suggestion thrown out by Mr. Hammond is worth following up; it has often struck me as a curious fact that examples of intermediate forms, apparently hybrids, between *A. Iris* and *A. Ilia*, should be so common; it has not yet been conclusively proved that Lepidopterous insects are never affected by their food-plant.—A. G. Butler, British Museum: 1*st January*, 1873.

*Vanessa Antiopa in January.*—Many of your readers will be interested to hear that a specimen of the Camberwell Beauty (*Vanessa Antiopa*) was taken here yesterday. A young lady was passing under some trees on her way home from church after morning service, when a large butterfly, which proves to be a Camberwell Beauty, fell in a torpid state, though still living, upon her hat. You have recorded many instances last summer of the appearance of this rare butterfly, whose *annus mirabilis* in England has been 1872: but that it should have favoured us with its presence in January is a most extraordinary fact.—J. N. SIMPKINSON, North Creake Rectory: *January 6th*, 1873. (Extracted from the 'Norfolk Chronicle,' *Jan. 11th*).

*Lepidoptera at Guestling in* 1872.—Bad as the past season has been, I have met with a few species worth recording, most of them, however, taken near the sea at Pett, a locality which, although it is but two miles distant, I have not as yet properly explored. June 10th—*Cymatophora fluctuosa:* this specimen was worn, but I took a beauty five or six weeks afterwards. July 8th—*Lithosia quadra*, ♂; I took at different times two specimens at sugar, and missed two more. *Cucullia asteris;* took one specimen on the wing, and later in the season found a few larvæ. 11th—*Odontia dentalis, Anerastia lotella, Homœosoma eluviella;* these were all taken at Pett, the last in good quantity at dusk, on the flowers of *Carduus lanceolatus:* I also took *Pterophorus lithodactylus* among the flea-bane. 13th—*Acronycta auricoma*, one, at sugar; *Rodophæa tumidella*, not uncommon. 19th—*Stenia punctalis;* took two specimens at Pett flying with *Cledeobia angustalis;* I could not distinguish between them until they were in the net. *Eupithecia subnotata*, several worn specimens. August 3rd—*Acidalia rubricata* came to light, to my surprise, as I should not have thought this a likely locality for it. September 1st—*V. Antiopa* about this date, as recorded last month (November), p. 138.

I am sorry to have to make the following corrections in former records:—*Phycis carbonariella* (Ent. Mo. Mag., May, 1871, p. 277) should be *P. betulella;* I had quite overlooked the small indistinct tufts of raised scales on the fore-wings. *Eupithecia virgaureata* and *Pterophorus microdactylus* (Ent. Mo. Mag., June, 1868, p. 23) were only *E. castigata* and *P. tephradactylus;* they were worn specimens about which I had felt doubtful, and were returned from London with the names I recorded. I am sure now that they were wrongly named.—E. N. BLOOMFIELD, Guestling Rectory: *November 7th*, 1872.

*On reversed motion of the limbs of Arthronomalus longicornis, Leach* (*electricus, Gervais*).—A few weeks ago, I had occasion to watch the proceedings of this Centipede, while dealing with its living prey, the large fuscous *Podura* so abundant among decaying vegetable matter.

Happening to disturb a flower-pot, I observed the creature rapidly sallying out of the interstice between the pot and saucer. It carried the caudal segment ahead and slightly raised, while the last pair of feet were acting as antennæ, their tips being directed forward, and occupied with alternatively feeling their way. As each succeeding segment appeared, I found the attached pair of legs moving forward in the direction of the caudal segment, till at last the head itself made its appearance, carrying in its mandibles a struggling and vigorous *Podura*, which, from its liveliness, I judged to have been seized the moment before.

Desirous of witnessing whether this reversed movement of the Myriapod was momentary, and caused solely by the feeling of insecurity to which the shaking of the flower-pot must have given rise, or whether it was an action to which the creature resorted in order to overcome the resistance offered by its living burden, and as affording the easiest mode of conveyance, I kept a close watch over the creature while it continued its reverse march over the rim of the saucer, down on the opposite side, across a broad path, and up the rough wall of a cottage. For all this distance, the caudal segment was leading and kept slightly raised, the pair of elongated feet attached to it acting as antennæ, while all the other pairs performed their reversed motion in rythmical succession.

Except in so far as the holding tight of the load was concerned, the head had, so to speak, abdicated its functions for the time, and was simply carried along like any ordinary segment, no external guiding movement of any kind being perceptible to me. When the convoy had gone as far up as I could conveniently reach, I was obliged to secure the Myriapod, but even while I held it between my fingers, it would not part with its prey. On being transferred to a box with a glass cover, it speedily coiled itself up round the *Podura*, and remained in this position, giving me time to ascertain its name.

No interference of mine could afterwards induce the creature to resume its peculiar march: the more I tried to make it shift its position, the closer it drew its coils around its victim.

The preceding observation clearly shows that this Myriapod has the option of reversing the normally progressive action of its limbs into an equally effective, and just as regular, prolonged, retrograde movement, accompanied by the temporary transfer of some of the guiding functions of the anterior parts of the head to the caudal segment.

The bearing of these facts on Mr. Herbert Spencer's theory of compound individuals is self-evident. Mr. Alfred R. Wallace, in his last Presidential Address to the Entomological Society of London, has given a plain summary of this theory, and I cannot do better than repeat this gentleman's remarks that "if the facts and arguments adduced by its learned and philosophical author do make out even a *prima facie* case in its favour, it must deserve the careful and unbiassed consideration of "all who endeavour to solve the problem of the origin of insects."—Albert Müller, South Norwood, S.E.: *November 11th*, 1872.

*Note on the "carding" and pinning of insects.*—As an old collector, I may be allowed to say a few words on this subject. When I first took up my net—now fully thirty years ago, a friend and I sought advice of the late Mr. J. F. Stephens, and we were by him recommended to *pin everything*. This advice we literally followed, spoiling hundreds of rare things, and entailing upon ourselves the enormous labour of replacing thousands of commoners. Fully thinking that "carding" is by far the best process for our *Coleoptera*, in which nearly all the species may be determined by the upper surface alone, I also think it perfectly indispensable for *Hemiptera* and *Homoptera*, and that it might even be extended to other orders with advantage. Nor do I see that size need be any drawback, in so far as native insects are concerned: even a *Carabus*, *when properly mounted* on card, is, in my opinion, quite as neat as, and certainly much safer than, when pinned. I find also a great advantage in the "carding" system, in the greater ease with which mouldy or greasy specimens may be cleaned, and, if necessary, remounted; operations nearly impossible to perform *on pinned examples* without serious damage.

Latterly, I have even tried "carding" Saw-flies, Ichneumons, Aculeate *Hymenoptera*, and *Diptera*, with results which I think are encouraging, as it leaves free for examination the sculpture of the thorax, which is often of the greatest importance in determining the species. It is by no means absolutely necessary that all the specimens should have their wings fully expanded; they answer every scientific purpose, and look very neat, if mounted on narrow slips of card with the feet and antennæ placed in their natural position. Such species as have important characters on the under-side, can be mounted sideways; that is, the insect laid on its side on the card, the lower antennæ, legs and wings brought out and gummed down: so treated, all parts can be examined, and with greater safety to the specimen than when it is on a pin. Great care, however, must be taken not to use too much gum, or the specimens will be utterly ruined. My way of mounting (say a saw-fly) is as follows:—taking a slip of card, somewhat larger than necessary, I lay a thin line of gum down its centre, on which I lay the fly, having first brushed out the antennæ, palpi, and legs; then, bringing out the tarsi, I secure such with a small pellet of gum, doing the same with the antennæ and palpi, and taking care to bring the mouth well forward: should I wish to expand the wings, I now leave the insect until the gum has set, which will be in about twenty minutes, when I bring them forward, securing each by a small drop of gum. With large species, however, it is better not to gum down the wings, but to keep them in place with braces until dry, as they can then be more easily cleaned and re-mounted.—THOS. JNO. BOLD, Long Benton, Newcastle-on-Tyne: *Nov. 5th*, 1872.

*The "new" sugaring lamp.*—Any tin-smith can make this lamp out of a common "sponge-lamp," as I mentioned when recommending it for the first time, in April, 1871 ("*Sc. Nat.*" i. 33), so that any one wishing to try it, need not send to Birmingham for it. I have been using one for *two seasons*, and find that it works well.—F. BUCHANAN WHITE, Eastferry, by Dunkeld: *January*, 1873.

SOUTH LONDON ENTOMOLOGICAL SOCIETY.—The members of this Society gave their first Exhibition on Thursday, December 12th, 1872, and the result was highly creditable to their energy and perseverance. Above thirty members contributed cases of insects.

The chief features of the Exhibition were: 1—the cases of *Lepidoptera*, which contained many rarities (far too numerous to specify), a large number of remarkable varieties, and long series of bred specimens, amongst which, Mr. Wellman's collection of *Acidaliæ* was especially remarkable; 2—some very interesting cases of *Coleoptera, Diptera, Hymenoptera*, and *Hemiptera*, and we hope, on a future occasion, to see these orders even more largely illustrated; and 3—a collection of *Phryganidæ, Hemerobiidæ*, &c., kindly lent by R. McLachlan, Esq.

The half-yearly meeting of the Society took place on December 18th, when it was announced that for the future the meetings would be held on each Thursday, from 8 to 10 p.m., at the Assembly Rooms, 104, Westminster Bridge Road, S.W. During the past half-year, the number of members has increased from 35 to 70; and valuable donations have been received from Sir John Lubbock, Bart., M.P., and W. A. Lewis, Esq. Mr. Wellman was re-elected President of the Society, and Mr. Farn was elected Vice-President.

Entomological Society of London, *6th January*, 1873.—Prof. Westwood, M.A., F.L.S., President, in the Chair.

Mr. G. C. Champion (formerly a subscriber) was elected a member, and Mr. Cole a subscriber.

Mr. McLachlan exhibited (on behalf of Mr. George Lewis) a magnificent collection of coloured drawings of the transformations of twenty-four species of Japanese *Sphingidæ*, executed by a native artist employed by Mr. Lewis.

Prof. Westwood exhibited the beautiful net-work cocoon of a species of small moth from New Granada; it was suspended from a leaf, to which was also attached one of the *Hesperiidæ*, strongly attacked by fungoid growth.

Mr. E. Saunders exhibited two species of *Buprestidæ*, from the Pelew and Caroline Islands respectively, apparently pertaining to a new genus, but having all the external characters of species of *Chrysodema* from the East Indian Islands.

Mr. Champion exhibited two rare British species of *Coleoptera*, viz., *Nanophyes gracilis* and *Apion sanguineum*, the former recently noticed as new to Britain in this Magazine.

Mr. Müller called attention to a recently issued government report respecting the ravages of the vine-scourge (*Phylloxera vastatrix*) on the continent of Europe. Professor Westwood remarked that this insect was noticed by himself in a paper read before the Ashmolean Society, at Oxford, in 1862, concerning its occurrence in England.

Dr. Sharp communicated a paper on the Water-Beetles of Japan, chiefly drawn up from materials collected by Mr. George Lewis.

Mr. Wollaston communicated a description of a new genus (*Pseudotarphius*) of *Colydiidæ* from Japan; and also a paper on the *Cossonidæ* of the same islands, in which he described eighteen species (all new) contained in fifteen genera. Mr. Wollaston stated that, so far as regards the group under consideration, he felt convinced that the ordinary European types do not prevail in that part of Japan investigated by Mr. Lewis, but are replaced by kindred or representative forms. A discussion took place, in which Messrs. Bates, Pascoe, Westwood, &c., took part. Mr. Pascoe thought the Japanese fauna might be regarded as "satellite," like that of Madagascar. Mr. Bates asked that judgment be suspended until further evidence be afforded, and said that, although many European species are also found in Japan, the collective faunas of the two regions are totally different.

## Review.

A Catalogue of British Hymenoptera; Part 2, compiled by the Rev. T. A. Marshall. Published by the Entomological Society of London (1872. Pp. viii. and 136. Price 2/-).

The readers of this Magazine are aware that a General Catalogue of the Insects of the British Isles is in course of publication by the Entomological Society. The Neuroptera, by Mr. McLachlan, appeared in 1870; the Aculeate Hymenoptera, by Mr. F. Smith, in 1871; and these have been followed, in 1872, by a second instalment of the Hymenoptera, including the *Chrysididæ*, *Ichneumonidæ*, *Braconidæ* and *Evaniidæ*. Of *Chrysididæ* we have 22 species, arranged in six genera, and of *Evaniidæ* only 7 species, distributed among four genera; but these families form a very small portion of the Catalogue now under consideration, for the *Braconidæ* number 125 genera and 439 species, whilst the *Ichneumonidæ* are 136 genera and 1186 species. Thus the List specifies and gives the synonymy of no less than 1654 species, a considerable proportion of which are now for the first time indicated as British. Such works as those of Dahlbom, Gravenhorst, Nees von Esenbeck, and Wesmael, of Förster, Holmgren and Thomson, shew that this group of insects has been far more extensively and thoroughly studied on the Continent than in this country; but the names of Haliday and Desvignes deserve to be remembered, and their mantle appears to have fallen on the Rev. T. A. Marshall.

In the 4th part of Trans. Ent. Soc. 1872, pp. 259—264, published in December, will be found some notes on this Catalogue by Mr. Marshall himself; and the limited space at the disposal of the present writer suggests to him the propriety of confining his remarks to a running commentary on the compiler's notes.

Mr. Marshall is able to make the satisfactory statement that, with the single exception of a misprint, *centauræ* for *centaureæ* on p. 112, "it is believed that no erratum exists of a kind likely to mislead the reader." When the nature of the work is considered, this is marvellous, but to a great extent it is attributable to the author's caligraphy. Having seen the MS., I can only regret that it could not be published in *fac simile.*

With regard to the names adopted and their orthography, the general correctness of the received names has been found to compare favourably with other Orders. Few changes of nomenclature have been introduced; the law of priority has been observed, but the observance has been tempered with discretion; "priority has been a hobby with the compiler, but the hobby has not been ridden to death;" cases of mis-spelling have been corrected, but the identity of the name has been preserved; where the faulty construction of compound names was found to admit of no simple remedy, the incorrectly-formed compounds have been retained, without attempting to improve what is radically wrong, or what, if touched at all, must be improved away; adjectival specific names have been made to agree in gender with the generic name. In short, the principles upon which the Catalogue has been prepared appear to the present writer to be sound principles, though naturally there may be room for doubt as to their correct application in particular cases.

On glancing over the pages, the following queries have occurred to me. On p. 2, Panzer's *Omalus* is properly changed to *Homalus;* why, then, on p. 50, is Stephen's *Enicospilus* not changed to *Henicospilus*, but left without the initial *H*? On p. 8, *Ichneumon periscelis* is retained; why, then, on p. 11, is *I. caloscelis* changed to *caloscelus?* On p. 50, *Ophion* is made of neuter gender, and, to agree therewith, Mr. Marshall has altered *obscurus, luteus,* &c., into *obscurum, luteum,* &c.; but why this change? Surely *Ophion* is masculine, as much as *Tryphon* (p. 73) or *Bracon* (p. 96); the fabulous Ophion of Sardinia was made masculine both by Greeks and Latins, and, as the proper name of one of the giants, or of the father of the centaur Amycus, Ophion is a masculine name: moreover, if the word were Ophĭon (neut.), not Ophīon (masc.), the genitive case would be Ophii, not Ophionis, and there would be difficulty in arriving at the name *Ophionides*, which Mr. Marshall adopts for this sub-family of *Ichneumonidæ.* On p. 132, are the specific names *leptogaster* and *appendigaster* substantives or adjectives? If the latter, should we not read *Dacnusa leptogastra* and *Evania appendigastra*? Or should the mongrel hybrid *appendigaster* be kicked out with his tail drooping? Again, on p. 51, is *xanthopus* a substantive, or an adjective agreeing in gender with the neuter *Anomalon?* If an adjective, and *Anomalon xanthopus* be right, ought we not, on p. 65, to find the group *Homalopodes* instead of *Homalopi;* or, if *Homalopi* be right, ought we not to have *Anomalon xanthopum?* Generic names like *Desmiostoma* (p. 123) or *Schizoloma* (p. 51) we know from a former volume of the Magazine to be regarded by Mr. Marshall as adjectives and to be properly made feminine; accordingly, the *S. amictum* of Wesmael becomes *S. amicta.* On p. 119, the name *Zele* is made masculine; but *Z. chlorophthalma* seems preferable to *Z. chlorophthalmus.* On p. 121, was the change of Haliday's *Biosteres hæmorrhœus* into *hæmorrhous* necessary? And the introduction of Haliday's name leads to the enquiry whether *Halidayus* or *Halidaius* is the proper latinized form? To the present writer, "Halidayus" seems impossible, and he would therefore write *Apanteles Halidaii* in place of Mr. Marshall's *A. Halidayi* (p. 105). In many other cases of these possessive personal names, do not nomenclators frequently introduce an *i* too many? thus, in *Chrysis Ruddii* (p. 3), *Cteniscus Curtisii* (p. 77), *Biosteres Wesmaëlii** (p. 121), why the second *i?* If required in these cases, why not in *Ellampus Panzeri* (p. 1), *Ichneumon Coqueberti* and *Bohemani* (p. 6), and *Euryproctus Waltoni* (p. 68)? Upon what principle have we *Pezomachus Ratzeburgi* and *Kiesenwetteri* (p. 47) coupled with *P. Neesii* and *Hoffmanseggii?* It is submitted that "Marshall's Ichneumon" will be rightly dubbed *Ichneumon Marshalli,* the genitive case of "Marshallus," not "Marshallius;" and that the termination *-ius* should be reserved for names ending in *e, i,* or *y.* Thus *Stibeutes Bonellii* (p. 45) is right; but *S. Gravenhorstii* is one jot too long; whilst *Phygadeuon Hopei* (p. 34), *Agrothereutes Hopei* (p. 45), and *Adelognathus Ruthei* (p. 76) might advantageously be spelt *Hopii* and *Ruthii.* Lastly, it is presumed that the specific name of *Aphidius pseudoplatanus* (p. 110) is to be regarded as the genitive case; the genitive *platanûs* in lieu of the familiar *platani,* does once occur in a poem entitled "Culex," which is sufficient authority for any Entomologist.

But let us pass beyond the husk of nomenclature to the Entomological kernel. The compiler "would gladly have placed the typical species of each genus first, and the rest in the order of their affinity to that type." But would this have been right? What is wanted is a linear sequence of species, the species at the tail of one genus leading gradually up to those at the head of the next genus, the species at the head of the latter being those which have most affinity with those at the tail of the former, so that the typical species of each genus (or of each genus except the first one of all) would not be the first in the list, but would gravitate towards the centre; the natural order is a gradual progression, a continuous sequence throughout, an unbroken series of steps, not an irregular succession of steps and jumps; by placing the typical species of each genus at its head, a chasm of greater or less width and depth would be placed between every two consecutive genera, which by a different arrangement of the species of both may be entirely or almost bridged over. The species of any genus should be arranged *inter se* on the same principle as the genera of the same family are arranged *inter se:* if the typical species of *Chrysis* is to be placed first in the genus, *Chrysis* as the typical genus of the *Chrysididæ* ought to be placed first in the family. The cataloguer however confesses that, owing to the imperfect condition of the literature relating to this group, and the absence of definite types, he has been unable to follow any uniform principle throughout, but has been guided by what he conceived to be the highest principle applicable to each particular case. This is good practical common sense, and we agree that, in the present state of the science, this is all that could be done. Such is the deficiency of our knowledge that in some of the larger genera Mr. Marshall has been driven as a last resource to an alphabetical arrangement of many of the species; for instance, out of twelve dozen species of *Ichneumon*, the last three dozen are given alphabetically, and out of 61 species of *Tryphon* only 13 are classified, which it is presumed must be taken as an indication that little or nothing is known of the residuum than that somebody has published certain names with descriptions, or has announced in some periodical or other the capture in Britain of certain continental species; they remain to be re-discovered by the Hymenopterist of the future, or perhaps to be shewn up as only old friends under different names.

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* By the way, in *Wesmaëlii,* and the genus *Wesmaëlia* (p. 113), why the diæresis? Why not *Wesmælia,* or *Vesmælia?*—J. W. D.

In the selection of citations and references to authors, Mr. Marshall had a difficult task to know where to draw the line, in order to keep the Catalogue within reasonable bounds. In this portion of his work, Gravenhorst would probably be at once his greatest aid and his greatest difficulty. So far as the reviewer can judge, he has acquitted himself of this task with admirable discrimination, his aim having been to "exclude all matter so doubtful as to be useless, and to render the references complete in all cases of certainty." In some cases, perhaps, exclusion might advantageously have been carried further; but, on the whole, inclusiveness, if a failing, is a failing on virtue's side.

The disproportion between the number of genera, as compared with the number of species, in the *Braconidæ* and *Ichneumonidæ*, can scarcely have failed to be observed on reading the first paragraph of these remarks. The 439 species of *Braconidæ* have been divided into 125 genera, only 11 fewer than the number which suffice for the 1186 species of *Ichneumonidæ*. As Mr. Marshall points out, this disproportion is the result of a totally different idea of Genus in different minds, and is mainly due to the labours of Förster. If the *Ichneumonidæ* were handled by a Förster as the *Braconidæ* have been, the 136 genera of our List would become 336 at least. To the specialist or student who limits his range of observation to a single group of comparatively small extent, this multiplication of so-called genera is attractive and convenient; but it may well be doubted whether it is an advantage to the general student, whilst many will think that it is a degradation of the genus, and that the characters upon which the minute sub-division is based are not generic characters at all. But this is too wide a subject to pursue on the present occasion.

In conclusion, I have to congratulate Mr. Marshall on the completion of his tedious task, the Society on having found so able and willing a workman, and British Entomologists generally on the fact that the Society by Mr. Marshall's aid has been enabled to place within their reach a Catalogue of this extremely interesting group of insects. This List ought to be a starting-point for many discoveries, for new species may be found everywhere, if collectors will only take the trouble to capture them. Entomologists who care not for Hymenoptera may do good service; too frequently for the realization of their hopes, our Lepidopterists make the acquaintance of parasitic Hymenoptera; and, if it be too much to expect that they should themselves devote a little attention to their persecutors, they might at least transfer them to Mr. Marshall, who would not consider them beneath his notice.

One word as to the future. It was understood some time ago that the *Tenthredinidæ* stood in the way of an early completion of this Order; but after the splendid instalment that last year has produced, may it not be hoped that arrangements have been made to finish the Catalogue of Hymenoptera in 1873?—J. W. DUNNING, *Lincoln's Inn: January*, 1873.

# INSTRUCTIONS FOR THE COLLECTION AND PRESERVATION OF NEUROPTEROUS INSECTS.

BY ROBERT M'LACHLAN, F.L.S.

(*continued from p.* 176).

## *Planipennia.*

In this division are grouped all the species with complete metamorphoses, excepting the *Trichoptera*, and as the groups are not so sharply differentiated as those previously treated upon, they will be severally considered in separate paragraphs. Several of the families are not represented in Britain. All insects of this division should be pinned and set in the ordinary way. The larger species may be pinned into the collecting box when caught; the smaller can be placed in pill-boxes or glass tubes, and many may be confined in one receptacle, for they seldom damage each other, and have no scales to rub off.

*Sialidæ.*—The most familiar representative of this family is the abundant *Sialis lutaria* (well known to the angler), which swarms on palings, walls, trees, &c., near water in early summer, and may be picked up with the fingers; its flight is slow and steady, but sufficient examples can always be obtained without the use of a net. It is frequently mistaken for a caddis-fly. Only this genus exists in Europe; but there are other exotic genera, and some of the species of *Corydalis* (a genus peculiar to America) are among the largest insects known, some being nearly six inches in expanse of wings, and the males usually provided with enormously elongated mandibles, the use of which is not clearly evident,* as they are harmless insects of nocturnal habits. Another genus, *Chauliodes*, is found both in the old and new worlds; some of the species are very pretty, and many remarkable for the diversified structure of the antennæ of the males. All the genera are aquatic in their early stages.

*Raphidiidæ* (*Snake-flies*).—A small group, peculiar to temperate climates, remarkable for the greatly elongated prothorax. The larvæ live under the bark of trees, feeding upon other larvæ, &c. The perfect insects may be taken by beating the boughs over the net, and fir trees are the most favourable for this operation; they may also be occasionally found on the trunks. Their flight is probably nocturnal, for they seldom show any inclination to use their wings when captured in the day-time. Up to the present time they have only been found in Europe, Northern Asia, and Western North America.

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* A very interesting account of the metamorphoses and habits of Corydalis is to be found in the 'American Entomologist,' vol. i, pp. 61—62. It is there stated that one use of these enormous mandibles *is to seise the female*.—R. McL.

We now come to a series of families or groups remarkable for the beautifully close network of their wings, which, however, gives them no powers of flight equal to that of the dragon-fly, and they are, for the most part, feeble insects easily captured.

*Myrmeleonidæ* (*Ant-lions*).—A very extensive family, tolerably well represented in Europe, but absent from Britain; furnished with *short* clubbed antennæ. The peculiar habit of the larvæ of many species, viz., that of making pit-falls in sand, wherein to entrap ants and other insects upon which they feed, is familiar to all entomologists. All appear to frequent sandy districts, and some are of very large size and great beauty. Most of them are nocturnal in their habits in the perfect state, and are seldom seen even in localities in which the myriads of pits in the sand formed by their larvæ prove them to be abundant. Their flight is slow and feeble, and they are frequently attracted by light. In preserving them, it is often advisable to run something into the body, as recommended for Dragon-flies, for, although they are not so liable to breakage as are those insects, yet their durability is rendered much more certain if the body be strengthened by artificial means: the point of dislocation most to be feared is between the abdomen and the meta-thorax. Some 300 species are already known, but many of them are difficult to determine, or even to describe, with any degree of satisfaction, and the generic differentiation of the various groups has yet to be undertaken, all done hitherto being only preliminary.

*Ascalaphidæ.*—Closely allied to the Ant-lions, but distinguished by their *long* clubbed antennæ, which are like those of butterflies; and, in fact, this peculiarity, combined with the gay colours of the restricted genus *Ascalaphus* (which is peculiar to the European fauna), so far deceived some of the earlier entomologists, that—overlooking all other characters—they described them as Papilios. They frequent dry and sandy districts, but the larvæ never make pit-falls. The species of *Ascalaphus* have a habit of 'dancing' in the air in the bright sunshine, and their powers of flight are greater than are those of any other *Planipennia.* Most of the less gaily coloured exotic genera are nocturnal or crepuscular, and one species has been noticed as having the habit of hawking after insects round the branches of trees in the evening, much after the manner of Dragon-flies, retiring into the crevices of the bark during the day. All of them rest with the wings closed longitudinally and roof-shaped in repose, with the exception of one American genus, in which they are extended horizontally. With the long slender-bodied species it is best to insert something in the body. Both these and *Myrmeleonidæ* may be sent home in paper envelopes, as noticed for Dragon-flies, though it is not here so advisable; but if this be done, it is especially desirable not to place them in the envelopes until fully dry.

*Nemopteridæ.*—One of the most extraordinary groups, the under-wings being extremely long and narrow, whereas the fore-wings are short and broad. The species are not numerous, and next to nothing has yet been recorded concerning their habits: they are peculiar to the old world, and frequent hot and arid situations. The most handsome species are found in the South of Europe. Care must be taken not to injure the long tail-like hind-wings, which are sometimes so slender as to be reduced to mere long threads; but several of them have these wings oddly dilated immediately before the tips.

*Mantispidæ.*—Yet another group not found in Britain, and even feebly represented in Europe. Noticeable for the elongated prothorax (as in *Raphidia*, only that the legs are attached to the anterior instead of the posterior end), and for the remarkably constructed anterior legs, which have very long coxæ, and strongly dilated raptorial femora, the tibiæ and tarsi being much aborted. The exotic species are very numerous. The larva of the European *Mantispa styriaca* has the peculiar habit of living in the nests of spiders, feeding upon their eggs and young; and an allied genus, *Trichoscelia*, found in South America, infests the large papyratious arboreal nests of Hymenopterous insects. This clue may be of service to collectors, especially as most species seem to be rather abundant where they occur, frequenting herbage and undergrowth. Their preservation calls for no particular remark, unless it be to exercise care in dealing with the legs.

*Nymphidæ.*—A small (chiefly Australian) family, concerning the habits of which we have no information. The typical *Nymphes myrmeleonides* is a large handsome insect, much resembling an Ant-lion.

*Osmylidæ.*—Represented in Britain (and Europe) by two genera, *Osmylus* and *Sisyra*, both aquatic in their larva-states, and frequenting rather swiftly-flowing streams. The handsome *Osmylus* is seldom seen on the wing, but may be easily brushed or beaten out of trees overhanging streams. The small *Sisyræ* are often abundant among the herbage bordering streams, and the larva of the common species has been found in the interior of the fresh-water sponge, but no doubt is not confined to this situation, as the insect is often abundant where there is no sponge. The discovery of the habits of some of the exotic genera must decide the question as to whether they really belong to this family: among these may be noticed the curious Australian genus *Psychopsis*.

*Hemerobiidæ* and *Chrysopidæ*. (Known as '*Aphis-lions*,' '*Golden-eyes*,' '*Lace-wings*,' and '*Stink-flies*').—Two families, which, in their larva-states, feed upon *Aphides*, often covering themselves with the empty skins of their prey. They may all be beaten out of trees, and are easily captured. Certain species affect particular kinds of trees. Fir-trees are always productive, both because they have species peculiar to them, and afford convenient shelter for others. The species of *Hemerobius* mostly sham death when in the net. The *Chrysopidæ* frequently come to gas-lamps: they are very numerous in species, and mostly of a delicate green colour, the eyes brilliantly golden or coppery when alive. Though amongst the most beautifully delicate of all insects, they are notorious for the power which some species possess of emitting an intolerably disgusting smell of ordure when handled, almost sufficient to cause the most enthusiastic entomologist to fling them away at once, and seek for means whereby to free himself from what may be likened to a concentrated essence of cesspools. Many of them, however, are perfectly inodorous. Some few (e. g., *Chrysopa vulgaris*) corrode the pins very rapidly, and become almost destroyed in the course of a few years. *C. vulgaris* hibernates, and, in winter, assumes a reddish colour. Their cocoons, like small white peas, may be found on the plants where the larvæ have been assisting the horticulturist, and it is a matter of no little astonishment to the uninitiated to observe so large an insect emerge from so tiny a cocoon. Re-set specimens should remain upon the setting boards for a considerable time, much longer than is requisite for the powerful dragon-flies; and care should be taken in relaxing not to allow the water to actually reach the wings, or these members become matted together, and are sure to get torn in endeavours to spread them out.

*Coniopterygidæ*.—Minute insects, wholly covered with a white, waxy, pulverulent secretion, and which may be beaten from trees, especially firs. Their treatment should be precisely similar to that adopted for winged *Psocidæ*. Some are so small that it is almost impossible to spread the wings, unless the manipulator has already had experience as a Micro-Lepidopterist.

*Panorpidæ* (*Scorpion-flies*, &c.).—Common amongst herbage, and easily captured on the wing, or swept up with the net. The males of *Panorpa* have the peculiar forcipate dilated terminal segment from which their vulgar name is derived. In setting, some of these males should have the three terminal segments forcibly extended until dry, as otherwise they are curved over the back, and not so easy to examine,—an important point, taken into consideration with the fact that the specific characters mostly lie in these segments. They are highly predacious, feeding upon other insects, and can inflict a momentarily painful wound in the fingers by means of their mandibulate rostrum. *Bittacus* (not represented in Britain) is extremely like a *Tipula*, only with four wings instead of two, and this disguise probably has a purpose, for, in the case of a recently discovered apterous species, it was found that semi-apterous *Tipulidæ* existed in the same locality; they may thus be likened to wolves in sheeps' clothing. The legs are of extraordinary length, and, in setting, must be arranged one by one with pins, otherwise they become entangled and easily break. *Boreus* is a genus of small and virtually apterous insects, found only in winter amongst moss, &c., and even sometimes on the surface of the snow. They mostly fall in the way of the Coleopterist when hunting for moss-frequenting beetles, and are no doubt often cast aside as *Acari*, or similar 'rubbish.' Though I cannot explain by what means they jump, it is nevertheless certain that they possess some amount of saltatory powers. The specific characters exist chiefly in the ventral segments of the males, a sufficient reason why they should not be 'carded;' simple pinning is sufficient, or, if time is no object, the legs may be neatly spread out with small pins.

The *Panorpidæ* are aberrant *Planipennia*, and by some are thought to form a passage to the next division.

## *Trichoptera* ("*Caddis-flies*").

In no group of insects have I acquired so much practical knowledge of the habits and private lives, as in the *Trichoptera*. Although my attention has been gradually directed to the order *Neuroptera* as a whole, yet the Caddis-flies were my earliest favourites, and still constitute my pet division of the order. The days and hours spent in the pursuit of our native species have been—I can safely say—the happiest moments of my life, and I still look back with unalloyed gratification to the year 1859, when, as an enthusiastic pupil of Dr. Hagen, I commenced to collect and study them. Would that I had more companions in the field!

Wherever there is fresh water, either standing or running (so long as it be not habitually dried up by the heat of summer, or poisoned by the refuse of mines and factories, or the sewage of large cities), there caddis-flies will be found. But the immediate vicinity of water is not absolutely necessary, for many of the more powerfully organised species evidently take long nocturnal flights, and are often dislodged during the day in localities very far from water. I remember once finding numbers of a species of *Limnophilus* in a sheltered hollow on the summit of a bare chalk-cliff, where there was no fresh-water for two or three miles. I have several times before had occasion to refer to fir-trees as particularly productive to the Neuropterist; to the collector of *Trichoptera* they are pre-eminently favourable. The best way is to beat the branches over the net, and the caddis-flies that tumble into it must be boxed or bottled speedily, for they are wonderfully nimble, and by their peculiar zig-zag motions, often escape; and this habit renders their pursuit when on the wing somewhat perplexing, for although they do not fly far when disturbed, they often baffle the collector, and are even difficult to detect when settled, though probably under one's very nose. Some species (e. g., *Colpotaulius*) may be "trodden out" from the herbage on the margins of ponds, and the longer the same spot is disturbed, the more abundant the insects become. Another good plan is to separate the reeds or flags with the hand, and examine closely near the roots or at the surface of the water, for this is the favourite diurnal hiding-place of many. The copings of bridges and walls should not be neglected. I have, on more than one occasion, found good species under the coping of the bridge over the Serpentine in Hyde Park. Some species of the beautiful long-horned *Leptoceridæ* fly briskly in the hot sunshine close to the water in calm weather; but, if an air of wind disturb the surface, or the sun become obscured for a moment by a passing cloud, they mount rapidly into the air and disappear. Some again (species of *Hydropsyche* for instance) dance in swarms over streams, especially towards dusk. Although (with only one or two exceptions) they are all aquatic in their earlier stages, yet their habits are as varied as are those of the terrestrial *Lepidoptera*. Many genera can only exist as larvæ in water that is always in a placid condition (such as that of ponds), whereas others require the element to be highly aërated (e. g., *Rhyacophila*) and constantly cold, and there are lovers of every intermediate state, so that a few miles walk along the banks of a small stream sufficiently varied in its character, will furnish a large number of species. Even the mechanical contrivances by which man alters the natural state of a stream for his own benefit are of use to the collector, for if the placid course of a slowly flowing stream be changed to a foaming waterfall by a weir or water-wheel, the congenial conditions are at once seized upon by species which otherwise might be sought in vain. In fact, it is probable that more species frequent running than standing water, and it is this that makes the torrents of alpine regions so particularly productive; the cold is no hindrance, they may be found up to the snow-limit, and delighting in the vicinity of a glacier. So marked is the necessity of certain aquatic conditions for the well-being of particular genera or species, that the water-system of a particular district or country can often be understood by an inspection of a collection of caddis-flies from it. Thus, I once examined a large collection of species from Holland, which told as plainly of a low-lying flat country without mountains or torrents as could the most elaborate map. A certain amount of shelter in the perfect state is absolutely necessary to *Trichoptera*, and for this reason streams flowing over barren rocks are not productive. The acme of success may be obtained when the stream is fringed with low overhanging bushes; the net should be placed as far under the bush as possible, and the latter beaten vigourously over it, taking care that the net itself do not come off its handle, or it may go sailing away down the stream at a rate anything but agreable to the astonished collector: such a *contretemps* has more than once happened to the writer. In moorland districts there are often streams which have cut their way through the peat, fringed with heather and other herbage; these are localities that should never be neglected. Light powerfully attracts some species, and unique or rare forms have more than once been found on gas lamps in the suburbs of London. It has also been recommended to hang a white sheet near water, the insects being attracted by it after dark, and settling on it. Tree trunks and walls near water should always be examined; on such positions the minute and excessively rapid species of *Hydroptilidæ* often absolutely swarm. But, after all, *experience*—that "hardest of all schools," as I have seen it termed—is the one thing to be gained and acted upon.

*Trichoptera* should be set exactly as are *Lepidoptera* (premising that the excessively low setting mentioned at the beginning of this paper be eschewed), but must remain upon the setting boards longer than is necessary for insects of the latter order. Relaxed and re-set specimens take an especially long time before it is certain that the wings will not ultimately fall back. Much care should be exercised in re-setting with regard to the management of the hind-wings, which are very troublesome and liable to get torn; occasionally a specimen will remain so long in the damping box that it falls to pieces, and yet these wings will not sufficiently relax the muscles at the point of attachment to the metathorax. If a specimen be quite intractable, then all one can do is to so far expand the wings by means of pins that an examination of the apex of the abdomen is possible.

No collection of *Trichoptera* can be considered complete without the cases manufactured by the larvæ of the various species. These are marvellous, alike from the beauty and variety of form exhibited in them, as from the great ingenuity displayed in their fabrication. The larvæ or pupæ should be extracted, and the cases may then be pinned, or gummed neatly on card. Cases made out of all sorts of fanciful materials may be obtained by forcing larvæ confined in aquaria to use such materials in default of being able to find anything else; but such cases should be looked upon in the light of curiosities only; there is always sufficient variety in natural conditions to satisfy the most fastidious collector.

### CONCLUSION.

My purpose will be served, if the foregoing sketch of the ways and means best adapted to the acquirement of a collection of *Neuroptera* induces some of our young entomologists, who are tired of forming part of the crowd that can see no beauty in any insects other than *Lepidoptera*, to strike out a path for themselves, by bestowing a favourable glance upon my favourite order. It will be doubly served if they become not only *collectors* but *students* of that order. The field is enormous, and the land almost untilled: the settler in it may have (speaking metaphorically) to hew his own timber and build his own hut, but the result will be an abundant harvest.

Notes concerning the breeding of the various families from the egg, or larva, must be deferred to another opportunity.

39, Limes Grove, Lewisham, London, S.E.:
*January*, 1873.

## DESCRIPTIONS OF TWO NEW BUTTERFLIES FROM THE WEST COAST OF AFRICA.

BY W. C. HEWITSON, F.L.S.

### PAPILIO ILLYRIS, sp. n.

*Upper-side:* male, dark brown; both wings crossed from the costal margin of the anterior wing beyond the cell to near the inner margin of the posterior wing before its middle by an equal, continuous, pale yellow band, divided by the nervures, which are scarcely seen; posterior wing with a long tail, dentated and traversed by a sub-marginal series of five green-yellow spots, the two spots nearest the base of the tails large.

*Under-side:* as above, except that it is paler, with the base of the anterior wing and the inner margin of the posterior wing ochreous-yellow; that the posterior wing has a black spot, bordered above with carmine, near the costal margin above the central band; that there is a carmine spot, marked with black, at the end of the cell, and two linear carmine spots between it and the inner margin; and that it is crossed by a series of large black spots beyond the midde, and by a sub-marginal series of linear black spots irrorated with lilac-white.

Expan. 3½ inches. Hab: Gold Coast.

Nearly allied to *P. Kirbyi*, and, like it, remarkably different from any other African butterfly which we have seen before. It was taken by Mr. Henry Rogers, on his way to St. Paulo de Loanda, where he has gone on a collecting expedition. Mr. Rogers, making a long and tedious voyage profitable, contrived to collect and send home nearly 700 insects taken during his passage.

### DIADEMA CHAPMANI, sp. n.

*Upper-side:* rufous-brown, with the margins broadly dark brown; the nervures black, the fringe marked by small white spots between the nervures.

*Under-side:* as above, except that the base of the anterior wing and the costal margin of the posterior wing are brightly ferruginous; that both wings have a sub-marginal series of very minute spots, in pairs; and that the anterior wing has a large bifid white spot between the median nervures.

Expan. $3\frac{2}{10}$ inch. Hab: Calabar.

I have given myself the pleasure of naming this species after Mr. Chapman, of Glasgow, an ardent admirer of the *Lepidoptera*, who has kindly added it to my collection. It is quite unlike any other species.

Oatlands, Weybridge: *February*, 1873.

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## NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 6).

BY F. BATES.

### EVOPLUS LECONTII, *sp. n.*

♂. Elongate-oval, pitchy-brown, glossy; legs, mouth, and base of antennæ clear ferruginous; head finely and sparingly punctured, anterior border reflexed, front

**concave, epistoma with two rather large triangular teeth in front, the sutural line arched; antennary orbits prominent and somewhat angularly rounded; the two horns, placed as in *E. ferrugineus*, are elongate, tapering and somewhat divergent from the base, curved backwardly, and slightly inwardly at their summits, rather broadly connected at the base by a transverse elevated ridge; behind the horns, the head is somewhat prolonged, and it is seen to be decidedly convex, the deep rounded excavation behind the upper portion of each eye in *E. ferrugineus* is in this species but faintly indicated; prothorax minutely and not closely punctulate, strongly transverse, sub-quadrate, very convex (almost gibbous), sides regularly and moderately rounded, base rather strongly bi-sinuate; elytra strongly sinuate at the base, scarcely so wide as the prothorax at its widest part, seriate-punctate, the punctures rather close together, the usual short scutellar row obsolete, intervals finely punctured, the punctures arranged somewhat in lines; anterior tibiæ rather strongly serrate at their outer edge from near the base, the intermediate serrate at their apical third only.** Long. corp. 3 lin.

♀. Unknown.

*Hab.*: "Colombia;" one example.

I refer this species to *Evoplus*, notwithstanding the excavation behind the eye (characteristic of the type species) is but feebly indicated rather than existent; but the position and character of the horns, the form of the eyes, which (more especially in the ♂) are narrowed in their upper portion behind by an expansion of the cheeks, the more regularly rounded sides of the prothorax, with its apex decidedly sinuous and the angles strongly rounded, are alike in both species, and different from the great majority of the species in the very closely related genus *Hoplocephala* (the members of which have usually the vertex and occiput deeply excavated in the ♂), the only other genus to which the present species could possibly be referred. It is, nevertheless, a question whether, having regard to the weakening of certain characters as perceived in *E. Lecontii* and in *H. lateralis*, the two genera had not better be considered as but one.

Dr. Horn, in his recently published work ('Revision of the Tenebrionidæ of America, North of Mexico'), places *Evoplus* with the *Ulomides*; and Dr. Le Conte, in his description of the genus ('New Species of North American Coleoptera,' p. 128), says "*coxis* "*mediis episternis arcte inclusis, trochantino nullo.*" In the four examples of *E. ferrugineus* before me, I find the mesocoxal cavities open externally, and the trochantin distinctly visible; the genus is therefore undoubtedly referable to the *Diaperides*, and must, if maintained as distinct from, be placed close to, *Hoplocephala*, with which genus and its allies it also agrees in having the prosternum very short, compressed, and convex, and the head somewhat loosely fitting in its cavity (apparent when viewed on the under-side).

The mandibles in the ♀ of *E. ferrugineus* are strongly angulated at their outer side, and project beyond the lateral margins of the apex of the epistoma and base of the labrum. It would be interesting to discover the ♀ of the species just described, to see if a like peculiarity exists.

## LIODEMA, Horn.

### (Rev. Tenebr. Amer. N. of Mexico, p. 385).

In addition to the character drawn from the peculiar form of the mesosternum (very accurately defined by Dr. Horn), it is necessary to add, at least for the species described below, that the antennæ are more or less serrate at their inner side, and the epipleural fold is rather broadly continued to the apex of the elytra.

**Liodema Kirschi**, *sp. n.*

Broadly ovate, convex, black, opaque; head, margins of prothorax, and scutellum, dull red; head and prothorax indistinctly and very minutely punctulate, the latter with two shallow, obliquely-placed foveæ at each side the middle of the disc; on each elytron, a dull red crescent-shaped band, curving backwardly from the base, at the scutellum, to the shoulders (but not nearly reaching the margin); the apex with a large, dull red patch, extending to the sides, suture and apex, and having on its centre an oblique blotch, black; the reflexed margins dull red; very finely seriate-punctate, the intervals rather broad; under-side reddish-brown, shining, legs and mouth organs shining testaceous; antennæ wanting; mesosternal process elongate, sides parallel, sub-truncated in front; abdomen glabrous, bi-foveate at each side, and longitudinally strigose. Long. corp. 2⅛ lin.

*Hab.:* Bogota; one example.

**Liodema obydense**, *sp. n.*

Broadly oval, sub-depressed, black, elytra opaque, head and prothorax slightly shining; the former entirely, the latter at the margins, rufescent; scutellum slightly rufescent; on each elytron, a dull red crescent-shaped band near the base, as in the preceding, but more obscure and with its lower margin crenulated; there is also a dull red band near the apex, but it does not reach the suture, and its upper edge is sinuous, its lower crenulate, or sub-dentate; the extreme apex is also dull red; apparently impunctate, but, when viewed under a high power, the surface is seen to be very minutely seriate-punctate; the reflexed margins black as far as the pre-apical band; under-side reddish-brown, somewhat shining; legs, mouth organs, and antennæ, shining testaceous; abdomen pubescent, finely punctured; mesosternal process short, broad, rounded in front. Long. corp. 2¼ lin.

*Hab.:* Obydos, Lower Amazons; one example.

Very near the preceding, but quite distinct by the characters indicated.

LIODEMA HORNI, *sp. n.*

Broadly oval, depressed, brownish-black, sub-nitid; head in front, and margins of prothorax, reddish-luteous, the latter with a slight oblique depression at each side of the median basal lobe; scutellum luteous; on each elytron, a broad, oblique, reddish-luteous fascia near the base, which does not extend to either the side or the suture, its upper margin (at the inner side) with a deep semi-circular notch, the lower margin with two similar but (especially the inner one) smaller notches; the apex—except near the suture—broadly pale luteous, the reflexed margins entirely reddish-luteous; minutely seriate-punctate; under-side castaneous; epipleural fold, legs, organs of mouth, and basal joints of antennæ, shining testaceous; joints 4 to 9 of antennæ rather strongly serrate within; mesosternal process short, broad, rounded in front; abdomen very finely punctured. Long. corp. 1¾ lin.

*Hab.:* Santarem, Lower Amazons.

LIODEMA FULVUM, *sp. n.*

Broadly oval, depressed, fulvous, sub-nitid; lateral margins of prothorax paler; on each elytron, an obscurely defined, pale luteous, oblique band near the base, extending from the shoulder to near the suture, its upper edge with a deep emargination; and another, sub-apical, pale testaceous, slightly oblique, expanding outwardly and reaching the margin of the elytron but not the suture; under-side, legs, antennæ, &c., shining testaceous; joints 5 to 9 of antennæ serrate within; mesosternal process short, broad, the end strongly rounded; abdomen finely and rather closely punctured. Long. corp. 2⅛ lin.

*Hab.:* Cumana; one example.

LIODEMA CONNEXUM, *sp. n.*

Broadly ovate, convex, sub-nitid; head and prothorax deep black, the former in front, and the reflexed margins of the latter, red; on each elytron, two deep black bands (one basal, and extending only half across the elytra, the other median, and extending two-thirds across), their inner margins expanding in a curve and uniting at the side of the elytron; distinctly seriate-punctate, almost punctate-striate at the sides; the reflexed margins entirely red; under-side shining reddish-brown; epipleural fold, legs, mouth organs, and basal joints of antennæ, shining testaceous; joints 5 to 9 of antennæ rather strongly serrate within; mesosternal process elongate, sides parallel, end rounded; abdomen impunctate, the 4th segment broadly and deeply emarginate. Long. corp. 2⅛ lin.

*Hab.:* "Colombia." A single example out of the Dejeanian collection, labelled "*Platydema connexa*, Dej."

LIODEMA SERRICORNE, *sp. n.*

Oval, testaceous, sub-nitid, sub-depressed: prothorax with six irregularly formed black spots; two central, rounded, and joined at their inner edges, two larger, oblong, and slightly oblique, at each side, and two triangular, situate at each side of the centre of the basal margin, close to the scutellum; on each elytron, three strongly toothed black fasciæ: the first sub-basal, incomplete, the outer half being represented by a humeral spot, and another spot near the margin, the second median, extending from the margin to the suture, and united to the first by a sutural extension, the third near the apex, shorter, extending neither to the suture nor the margin; reflexed margins entirely testaceous; indistinctly and very minutely seriate-punctate, the punctuation scarcely visible except at the sides; under-side dark reddish-brown; legs, epipleural fold, sides of abdomen, and antennæ, shining yellow; the latter with joints 4 to 9 strongly serrate within; mesosternal process short, broad, rounded in front; abdomen finely longitudinally strigose. Long. corp. 2⅛ lin.

*Hab.*: Cayenne; one example.

## STENOSCAPHA, *g. n.*

Differs from *Liodema* in having the form narrowly oval, the outer edge of the anterior tibiæ finely pectinate, and with two unequal spines at the apex outwardly; the four posterior tibiæ setose at their outer edge, and bi-spinose at the apex outwardly; the tibial spurs much longer; the eyes narrower at the sides and above, less approximate above, not obliquely prolonged on the front; and the middle joints of the antennæ triangular, but not serrate within. Mesosternum, &c., as in *Liodema*.

A genus remarkable by the peculiar armature of its tibiæ.

### STENOSCAPHA TIBIALIS, *sp. n.*

Elongate-oval, black, sub-nitid; head in front, and margins (more especially the basal) of prothorax, rufescent; head and thorax minutely punctured; scutellum slightly rufescent; elytra obsoletely seriate-punctate, the intervals finely punctured; the reflexed margins entirely, and the suture obscurely, red; the apical half of each red; under-side reddish-brown; abdomen pubescent, finely punctured; mesosternal process elongate, sides parallel, end rounded; legs and antennæ reddish-testaceous. Long. corp. 1⅓ lin.

*Hab.*: Ega, Upper Amazons; one example.

### ALLOPHASIA* MARSEULI, *sp. n.*

Oblong-oval, smooth, shining; bright reddish-ferrugineous, except the outer eight joints of the antennæ, which are dull reddish-brown; head finely and not closely punctured, strongly depressed between the eyes, front edge of epistoma elevated, slightly reflexed, rather strongly bi-emarginate, the middle lobe scarcely forming a horn or tooth; prothorax moderately rounded at the sides, very finely and rather closely punctured, the anterior margin armed at the middle with two rather short conical pointed horns, curved slightly backwardly and outwardly, broadly connected at the base by an elevated ridge, and having behind them a broad and rather deep excavation; elytra finely punctate-striate, the striæ very faint, the intervals finely and rather closely punctured, and sub-convex behind. Long. corp. 2⅛ lin.

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* *Pascoe*, Ann. and Mag. of Nat. Hist., November, 1871, p. 351, pl. xiv., fig. 11.

A single (♂) example out of the 'Collection Doué,' labelled "*Neomida foveicollis*, Buquet."

At once to be distinguished from *A. Fryi*, Pasc., by the more elongate and parallel form, the entirely reddish ferruginous colour, the differently formed horns at the fore-margin of the prothorax, &c.

15, Northampton Square, Leicester:
*January*, 1872.

## ON CERTAIN BRITISH *HEMIPTERA-HOMOPTERA*.

BY JOHN SCOTT.

(continued from Vol. vii, p. 196).

For the first time in their lives, European Homopterists are in possession of a complete list of the species. The late Dr. Fieber's "Katalog der europäischen Cicadinen"* shews that about 850 species is their sum total; but I fear we shall not be able to produce British representatives for a fourth of that number. Although the list occupies only some 16 pages, yet the labour required in constructing it must have been very great; for, except amongst some of the more common species, the descriptions by older authors of a very large number are so vague and unsatisfactory, that it was absolutely necessary that originals types should be obtained for comparison and identification. Now that we have a definite starting point, I purpose, from time to time, to give a revision of various genera, so as to enable those who are at work upon them to have an idea of what species we possess, and to describe such as may be new to Britain, so as to lead others to trace their identity. Fieber's list is cheap, and will serve well for labelling.

[*Revision of the Family* DELPHACIDÆ, *and descriptions of several new species of the genus* DELPHAX *of Authors.*]

Species 8a.—LIBURNIA ÆMULATOR, *n. sp.*

Undeveloped form, ♂.

Keels of the head and face white; *pronotum* greyish-white. *Scutellum* pale brownish-yellow.

*Head* longer than broad, pale brownish-yellow; *crown*—keels white, not prominent, channels black as far as the apex of the long, narrow triangle formed by the middle keels. *Face* yellowish, keels white, margins of the keels black. *Antennæ* yellowish. *Eyes* fuscous-grey.

*Thorax: pronotum* greyish-white, keels distinct; beyond the side keels, and underneath the eyes, somewhat pale brownish-yellow. *Scutellum* pale brownish-yellow, *margins and keels* greyish-white. *Elytra* pale fuscous, scarcely half the length of the abdomen, rounded posteriorly; nerves not prominent nor granulated. *Sternum* yellowish. *Legs* pale yellowish-white; *tarsi*—1st and 2nd pairs, with the apex of the 3rd joint, narrowly black.

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* To be obtained through Mr. Janson, 28, Museum Street, W.C.—J. S.

*Abdomen* above brownish-yellow, with a narrow, pale dorsal line; 3rd, 4th, and 5th segments on each side with three dark spots, the intermediate spaces pale as in the dorsal line, 6th with a dark spot in a line with the middle row of the foregoing; *genital segment* yellow, black from the middle to the apex; appendix black at the base, apex yellow, styloid processes pitchy-black, somewhat T shaped.

Undeveloped form, ♀.

Similar to the ♂ in all respects, except the following, viz.:—keels of the face broadly black; apex of the inner margin of the elytra with an indication of a fuscous streak. *Abdomen* slightly pale fuscous towards the base, middle row of spots on the sides large and black. Length, ¾—⅞ line.

Developed form unknown to me.

Nearly related to *L. elegantula*, but it has not a black scutellum, nor a black patch, almost concealed by the eyes, on the pronotum, as in that species. Viewed from the side, the similarity in appearance of such portions of the genitalia of these two species as are visible is remarkable, but their styloid processes are entirely different in form.

I possess a ♂ and ♀ taken by myself on Dartford Heath, in August, 1867.

### Species 11a.—LIBURNIA CONSANGUINEA, *n. sp.*

Undeveloped form, ♂.

Keels of the head and face white, the latter narrowly margined with black; *pronotum* and *scutellum* pale luteous or yellowish-white. *Abdomen* black.

*Head* longer than broad, pale luteous or yellowish; *crown*—the two basal foveæ deep and distinct, keels white, channels black as far as the apex of the triangle formed by the two middle keels. *Face* luteous or yellowish, keels white, narrowly margined with black; adjoining the side keels are (apparently) two pale pustules, the upper one almost in a line with the lower margin of the eye. *Antennæ* yellow. *Eyes* dark brown or piceous.

*Thorax*: *pronotum* pale luteous or yellowish. *Scutellum* pale luteous or yellowish, darker between the keels, which have a greyish appearance. *Elytra* grey, almost transparent, scarcely covering half the abdomen, rounded posteriorly; nerves distinct, not granulated. *Sternum* yellow; *metasternum* with a large, somewhat oval, black spot on the sides. *Legs* pale yellow or yellowish-white; *tarsi*—apex of the 3rd joint of the 1st and 2nd pairs narrowly black.

*Abdomen* black, with a very narrow, orange-yellow, dorsal line, and a marginal spot of the same colour at the posterior angle of each segment; *genital segment* black; styloid processes pitchy-black. Length, 1 line.

♀ unknown to me.

In appearance, somewhat like *L. distincta*, but the pale head, pronotum, scutellum, and elytra will at once lead to its separation.

Two males are all the examples I have seen; and these were taken by Mr. Douglas, at Bournemouth, in September.

### Species 13a.—LIBURNIA SIMILIS, *Kirschb.*

*Liburnia similis*, Kirschb., Cicadinen, p. 30, 22 (1868).

Undeveloped form, ♀.

Keels of the head, face, pronotum, and scutellum concolorous.

*Head*, *pronotum*, and *scutellum* brown, the two latter somewhat reddish-brown. *Elytra* clear brownish-yellow, covering more than half the abdomen, obtusely rounded posteriorly, nerves finely granulated, marginal nerve slightly pale. *Legs* yellow; *tarsi*—1st and 2nd pairs fuscous.

*Abdomen* dusky fulvous or brownish, posterior margin of the segments paler.

Length, 1 line.

This species will come immediately after *L. Boldi* in our list, as it at present stands.

I possess two females from Scotland, but have no record as to precise locality or date of capture.

(*To be continued*).

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## DESCRIPTIONS OF TWO NEW SPECIES OF *ICHNEUMONIDÆ* (*ANOMALON* AND *MESOSTENUS*) FROM GREAT BRITAIN.

BY THE REV. T. A. MARSHALL, M.A., F.L.S.

### ANOMALON FASCIATUM (Smith, M.S.), sp. n.

*A. nigrum, ore, mandibulis præter apicem, clypeo, facie, orbitis internis et externis, antennarum articulo primo subtus, prothoracis maculis duabus triangularibus, duabus sub alis, aliaque supra coxas posticas, scutello, trochanteribus, segmenti primi apice, secundi et sequentium dimidia fere parte, flavis: antennis pedibusque rufo-flavis, illarum articulo basali supra nigro, articulis apicalibus supra fuscis, horum femoribus posticis subtus nigro lineatis, tibiisque posticis apice nigris.*

♂ ♀. *Long.* 8—9 *lin.*

Head buccated, not wider behind the eyes; front with two blackish foveæ under each antenna, and, between these foveæ, a protuberance with a central black tubercle. Clypeus indiscrete, faintly but widely emarginate at the apex. Mandibles with two sub-equal teeth. Antennæ longer than half the body, filiform; first joint of the flagellum twice as long as the second. Eyes naked, not emarginate at the base of the antennæ. Thorax almost as broad as the head and, with the pleuræ, thickly punctured, sub-obscure; scutellum convex, shining yellow, punctured; metathorax not excavated in the middle, sub-rugulose, obscure, with a shining carina, curved outwards, on each side near the base. Abdomen smooth, shining; first segment two-thirds of the length of the hind femora, its sides parallel to just before the tubercles, then slightly widened, and again parallel to the apex; the second and following segments strongly compressed, giving the abdomen (viewed laterally) an elongate-pyriform appearance. Terebra hardly exserted. Hind tibiæ and tarsi incrassated, but less so than in other species of the genus; ungues simple. Fore-wings with the discoidal transverse vein continuous with the dividing nervure of the two cubital cells, and hardly geniculated close to its base; the transverse anal nervure of the hind-wings genticulated in the middle. Both sexes are similarly coloured. The yellow fasciæ of the abdomen are paler after the second segment; continued, but narrower, under the belly. Coxæ shining black; trochanters yellow; femora and tibiæ reddish-yellow; the hind femora with an apical black streak beneath.

The abdomen is shorter, stouter, and more pyriform than in other large species. The black and yellow coloration are suggestive of *Banchus*, but the absence of the areolet corrects the impression. The neuration of the wings, as indicated above, is peculiar, and might be taken as constituting a new genus, of the same value as *Agrypon* and others. The specimen above described, which Mr. Smith has kindly given to me, is a ♀, but I have seen one or more males of it in the British Museum. They were bred by Mr. Mitford, from a supposed permanent variety of *Lasiocampa trifolii*, and are not only new to Britain, but hitherto unknown anywhere.

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I am also favoured by Mr. Smith with the following information respecting a fine *Mesostenus*, hitherto undescribed, in the British Museum. Perhaps this notice may serve as a guide to any collector who may be fortunate enough to meet with the same species in the north of England. Five specimens were purchased by the Museum at the sale of the late Mr. Heysham's collection. They attracted the notice of the late Mr. Desvignes, who intended to describe them, but unfortunately did not. They were taken in the neighbourhood of Carlisle, as were also four specimens of *Trigonalys anglicana*, one of which was sent to Mr. Smith for identification. The following is that gentleman's description of the *Mesostenus*, which I propose to name

### MESOSTENUS MAURUS, sp. n.

"Totally black, excepting the scutellum, which is yellow, as well as six joints "of the middle portion of the antennæ. The anterior tibiæ, and the apical portion "of the femora, are ferruginous; the anterior tarsi obscurely so. The extreme apical "margin of the first segment of the abdomen is sometimes obscurely ferruginous. "Metathorax truncate, armed laterally with two acute spines. Long. 5 lines."

I have seen, but never examined, the specimens, and my impression is that they are of large size for the genus.

St. Albans: *February*, 1873.

*Note on a second British species of Liosomus.*—I have had in my collection for a long time, but have accidently hitherto neglected to examine and record, a single example of a species very distinct from our common *ovatulus*, not taken by myself, but given to me as a variety of that insect, and for which I cannot publish the precise locality, as I had no note of it with the specimen. It is, from description, evidently the *Liosomus oblongulus* of Boheman, in Schönherr's Gen. et Spec. Curc. vi. (Suppl.), p. 316; but I have had no opportunity of comparing it with any type of that species, as the only supposed exponent of it to which I have access is that in the general collection of the British Museum (arranged by M. Jekel), and which is distinctly only *ovatulus*. Compared with typical *ovatulus*, my insect (an immature ♂) is rather smaller, very decidedly longer and narrower, with a longer and more coarsely and deeply punctured rostrum, which is not quite so stout or so curved downwards, longer antennæ (the scape being especially long), straighter sides to the thorax, and un-toothed femora. Beneath, it is rather more strongly and remotely punctured, and the (♂) metasternal depression is wider and better defined.

As regards *ovatulus*, I think the not uncommon lighter coloured race deserves at least some recognition, and therefore propose the name *collaris* for it, as it seems by no means improbable that specific rank may eventually be attributed to it. As far as my experience goes, I find this race to be smaller than the type, and to have fuscous or rufo-testaceous legs with darker tips to the femora, the legs themselves being rather longer and of more feeble build (the femoral tooth being also not so much developed), rather longer antennæ, and very often a clear red thorax, of which the punctuation is apparently always not quite so close. Colouration does not seem to be the result of immaturity in this form, which my friend Mr. John Scott tells me he used to find in moss at Renfrew, where it was the commoner of the two. I do not happen to have taken any individuals of the ordinary larger and deep black form varying at all in size; but I am indebted to that indefatigable observer, Mr. H. Moncreaff, for one rather smaller than the smallest of my rufescent individuals (*i. e.*, about half the ordinary size of the black race), and which was taken, with others like it, by him out of moss, in a very restricted locality, unaccompanied by any large specimens, near Portsdown Hill. The black common form has never occurred to me in moss; but always in or about wet *débris* at the water's edge. As regards punctuation, I find that the males often have the thorax less closely punctured than the females; some of the latter sex also having the thoracic punctuation much closer than others. Both sexes have the femora distinctly denticulated beneath; Boheman's doubt as to the correctness of Clairville's reference of femoral teeth to the ♀ and none to the ♂ being well founded: but certain lately described species are stated to present sexual differences in this respect. I observe that in ordinary black *ovatulus* the protuberance above the middle of the inner side of the front tibiæ is more evident in the ♂ than in the ♀. This protuberance is very slightly indicated in my individuals of the race *collaris*; and it is wholly absent in my ♂ *oblongulus*, of which the anterior tibiæ are slightly but evenly curved inwards for their whole length until quite close to the inner apex.—E. C. Rye, 10, Lower Park Field, Putney, S.W.: *February*, 1873.

*Note on a species of Bagous new to Britain.*—I am indebted to Mr. Champion for a *Bagous* (of which some half-dozen specimens were, I believe, given to him by

Dr. Power, who took them during the past year) new to our list, and which I refer to *B. brevis*, Schön. and Thomson. Superficially somewhat resembling *B. frit*, which it rather exceeds in size, this insect is readily distinguishable by its thorax being very strongly constricted before the apex, and having a dorsal channel ending in the middle one of three foveæ, situated in the anterior constriction. The interstices of its elytra are slightly elevated, the 5th exhibiting the usual callus; and the tibiæ are stout, much curved inwardly, and thickened above the middle.—Id.

*Note on possible effects of isolation.*—Among some beetles sent to me for names by Mr. J. Chappell, are a few from the Isle of Man, of which the following exhibit some peculiarity.

*Notiophilus palustris*, two examples; one much narrower and with the punctuation much coarser than usual, the interstices being elevated, and the whole insect symmetrically abnormal; the other of the usual facies, but with two large well-marked and evenly-balanced punctures on the front of the disc of the thorax,—a character which at all events deserves record, as (upon the elytra) materially assisting to establish specific rank for *N. 4-punctatus*.

*Amara trivialis;* smaller and darker than usual, of entirely dull surface.

*Harpalus æneus;* also much smaller, and with the emargination at the apex of the elytra (an unstable character) less deep than usual; the male exceedingly bright green, with coppery suture to the elytra and dark legs, and the female very dark and dull, with subdued green silky reflections; in both, the thorax is more than usually contracted behind, with the basal foveæ very distinctly marked: and this is particularly conspicuous in the female, in which the usual irregular basal punctures are entirely wanting. I can almost exactly match this female with an example from the Shetland Isles.

*Aleochara cuniculorum;* wanting the usual red spots on the elytra.

Remembering the eccentricities of Manx *Meloë proscarabæus* recorded in this Magazine, I cannot but think that the occurrence in one small box of these divergencies from the normal condition is not merely accidental. Mr. Chappell tells me, also, that *Corymbites quercûs* abounds on *rocks* in the Isle of Man; and, as it appears to find a footing in such a very unlikely place, I can only suppose that it is affected by the motto (" Quocunque jeceris adsto ") of the Island.—Id.

*Note on the Cossonus linearis of British collections.*—Being occupied just now on a revision of the genera of the *Cossonidæ*, I have had occasion to compare a few ordinary specific forms, and it has greatly surprised me to find that English examples which I had been accustomed to regard as the *Cossonus linearis*, do not, in reality, pertain to that species at all, but to the *ferrugineus*, Clairv. The particular individuals now before me were taken several years ago by Mr. E. W. Janson, in an old willow-tree close to Kentish Town; but I believe them to be conspecific with what I used formerly to obtain near Cambridge, and elsewhere, and I should be thankful, therefore, if Coleopterists would look to their examples of so-called " *C. linearis*," in order to ascertain whether they are correctly identified, and do not belong rather (as I suspect) to the *C. ferrugineus*. There is not the slightest difficulty in distinguishing the two species,—the true *C. linearis* (which may, perhaps, prove, after all, not to be British) being very much flatter, and more deeply and coarsely sculptured, with its rostrum a little shorter, thicker, and more dilated towards the tip, with its scutellum appreciably larger, and with its tibiæ (at any rate, the four hinder ones) less sinuated internally. There are many other characters, which will at once be seen on inspection; but these will suffice for my present purpose.—T. V. Wollaston, Teignmouth: *February*, 1873.

*Note on the synonymy of Cryptophagus crenatus, Gyll.*—When at Macugnaga last summer, I captured a very remarkable and interesting *Cryptophagus* in a boletus. On attempting to name the specimens, I find the species to agree accurately with Erichson's description of *C. crenulatus*, except that my specimens are considerably smaller than the size he gives (1½ lin.), the largest of my specimens being scarcely a line in length. I consider, however, this discrepancy not to be of importance, and accordingly indentify my species as the very rare *C. crenulatus*, Er. After his description, Erichson adds a note, saying that Gyllenhal's description of *C. crenatus* applies accurately to *crenulatus*, except in the size,—Gyllenhal saying that *crenatus* is more than twice as small as *scanicus*. Now, as this is really the case with my specimens of *crenulatus*, it would appear that Erichson's *crenulatus* is really synonymical with the *crenatus* of Gyllenhal. Thomson, however, has identified the description of Gyllenhal with a totally different insect, viz., the *C. bicolor* of Sturm and of our collections, and he replaces the name *bicolor* with that of *crenatus*, Gyll. On consulting Gyllenhal's description, however, I cannot agree with Thomson in assigning it as applicable to *bicolor;* while, on the contrary, it seems to me really applicable to my small specimens of *crenulatus*, as it was thought by Erichson it might be. There is, however, yet another difficulty. Gyllenhal quotes with a query his *C. crenatus* as being the *Dermestes crenatus* of Fabricius. On turning to Fabricius, I find that his *Dermestes crenatus* (first described, by the way, in Ent. Syst. Supp., 72, 41) may or may not be this insect, his description being quite worthless. It is *probably* neither *crenulatus*, Er., nor *bicolor*, Sturm; but appears particularly inapplicable to *bicolor*. I think it may be left out of the question altogether, until its type be forthcoming for its identification. It remains then to be decided whether Gyllenhal's name shall be adopted for *crenulatus*, Er., or for *bicolor*, Sturm, or for neither. I am myself in favour of this latter course; for I do not think Gyllenhal's name should be adopted for *bicolor*, because his description is not applicable thereto, and I do not think we should be justified in substituting the name *crenatus*, Gyll., for *crenulatus*, Er., because, though the description would appear to warrant this, yet we have no corroborative evidence of the occurrence of *crenulatus* in Sweden. I may add, that my specimens were found in a boletus adhering to a dead and decaying pine, in company with *Epuræa variegata* and *Gyrophæna boleti*. These circumstances render its occurrence in Sweden probable; but, until this be proved, I think *crenatus*, Gyll., must remain a doubtful name, more especially as he says of his insect, "Hab. in quisquiliis." I will merely add, that Thomson gives no reason for his adoption of the name *crenatus*, Gyll., for *bicolor*, Sturm, beyond quoting Gyllenhal's description. —D. Sharp, Eccles, Thornhill: *January*, 1873.

*On the reported occurrence of Apatura Ilia in England.*—Mr. W. Oxenden Hammond kindly sent me for examination the supposed British specimen of *Apatura Ilia*, which is mentioned by Mr. Butler in a communication to 'The Entomologist's Monthly Magazine,' published in the last number, p. 219.

I think some mistake must have been made with regard to this butterfly, which appears to be a rather remarkable aberration of the Asiatic form of *Ilia* = *Metis* of Kindermann, which differs from the European type in the much more fulvous ground colour of its wings, and the absence of the ocellus at the anal portion of the posterior wings, which is very conspicuous in the ordinary European specimens.

The larvæ of *A. Iris* and *A. Ilia* feed upon sallows and aspens, and never upon oak. *Iris* is almost entirely confined to woods in which the large wood sallow *(Salix capræa)* grows; but *Ilia* is quite as often found in meadows in which sallows and various kinds of poplars are growing. A friend of mine took *Ilia* in plenty in some meadows a few miles south of Paris, flying round the sallows on the borders of a stream. Both species are single brooded, and the young larvæ hibernate when very small, stretched out along the branches of sallows and aspens on which they have previously spun a web to which they are attached by their feet. I have found the young larvæ of *Iris* in March on the catkins of the sallow shaken from the trees in Ongar Park Woods. They feed upon them till the young leaves appear, when they eat the leaves and are often more than half-grown before an oak leaf is to be seen. My late friend Dr. Maclean, of Colchester, often had young larvæ hibernating on a sallow in his garden under a covering of muslin. The larvæ of *Iris* change to pupæ in June, and the butterflies always emerge in twenty-one days, and are on the wing the beginning of July. The same remarks apply to *Ilia*, except the time of appearance which is rather earlier: it is a more southern species than *Iris*.

I very much doubt the occurrence of hybrids between *Iris* and *Ilia*: the former scarcely varies at all except in the occasional absence of the white fascia across the wings, while the latter is perhaps the most variable of European butterflies.

I do not think the colours of Lepidopterous insects are ever affected in consequence of the larvæ having fed upon different plants growing in the same soil; but difference of soil decidedly affects the colours of some species, of which *Gnophos obscurata* is a familiar example.—Henry Doubleday, Epping: *February* 12*th*, 1872.

*Vanessa Antiopa in Yorkshire.*—From the large number of specimens of this fine insect captured or seen in Yorkshire during the past year, it would seem that the Lepidopterists of that County have been especially favoured.

To those already named in the Magazine, I can add the following: Sept. 13th, a very fine example sent by a gardener from Warthill, about four miles east of York, to Mr. I. Robinson, and now in my cabinet. On the same day, a boy took one whilst gathering blackberries; and a few days after one was taken in the window of a coach factory, close to the Cathedral, and another by Mr. Dutton of York.

It appears to have been very abundant near the east coast. I have a letter before me from a friend at Beverley, who states that over twenty have been taken there, though only two of these were good specimens; and that Mr. Boyes knocked down four with his stick, when walking in the garden. I saw one in November that had been taken in Malton Railway Station; and the gentleman who had it told me that several had been seen and captured near Driffield.—Wm. Prest, 13, Holgate Road, York: *January*, 1873.

*Vanessa Antiopa in Northumberland and Durham.*—In common with other parts of the Kingdom, we were last year visited by this very fine insect in unwonted numbers. I have notices of about twenty specimens having been captured, and fully as many more seen on the wing, within the two counties. Most of them were taken or noticed between the 20th and 31st of August. All have white bordered wings, except one, which being a very fine specimen, is, I think, worthy of a little more notice from its having the wing borders decidedly yellow, and not white or yellowish-white. When placed amongst a series from Central Europe, it is found to be perfectly identical in colour, and can only be separated therefrom by the different pinning and setting. This specimen, which is now in the cabinet of my friend, Wm. Maling, Esq., was taken in Jesmond Dene, near Newcastle, on the 23rd of August, about 11 a.m., and, from its absolutely perfect condition, and sluggish flight, had evidently only very recently left the chrysalis. When first noticed, it was sitting amongst low herbage near some willows, and when approached flew heavily up to the branch of a tree, from where, on being dislodged by clods of earth, it fell to the ground, and was taken by the captor with his finger and thumb.—THOMAS JOHN BOLD, Long Benton, Newcastle-on-Tyne: *January 25th*, 1873.

*Butterflies at sea.*—In the "Abhandlungen vom naturwissenschaftlichen Vereine zu Bremen," Band 2, Heft 2, pp. 297—298 (1872), Herr F. Buchenau notices the occurrence of swarms of *Pieris brassicæ* at sea, off the mouth of the Weser. In the middle of July, 1872, he made a sea-excursion on board a fishing boat from Bremerhaven. So long as the boat was in the river, or at its mouth, only an occasional 'cabbage-white' was to be seen crossing the river, and soon disappearing. But, when once out at sea, the boat was enveloped in a swarm of these butterflies, so thick as to resemble a snow-storm. The weather was hot, and the surface of the sea undisturbed by any wind. Many of the insects were to be seen posing themselves with erect wings on the surface, others were lying flat on it, as if dead, but flew away rapidly if disturbed. They were accompanied by Dragon-flies (*Æschna* sp.) which evidently preyed upon them, and also by small flies and ichneumons. Herr L. Häpke (in a foot-note) mentions a similar occurrence in a neighbouring locality in July, 1868.—EDS.

*Natural History of Acidalia incanaria.*—I am indebted to Mr. J. E. Fletcher, of Worcester, for the opportunity of renewing my acquaintance with the larva of this species; some eggs kindly sent by whom, loose in a quill, on the 26th of July, 1872, hatched on the 2nd of August following.

The young larvæ fed from the first on *Polygonum aviculare*, thriving so fast that one had changed to a pupa by the 31st of August, several others by the 5th of September, and more by the 14th; the remainder being attacked and killed by mildew when approaching pupation. The first moth appeared on the 14th of September, the others between the 26th of that month and the 3rd of October.

The egg is of a rather long oval shape, a little depressed on part of its surface, with the shell very finely reticulated, and of a deep flesh colour, turning to brown two days before hatching.

The young larvæ at first, and for some time, were of a pale ashy grey tint above, and darker grey beneath; resting often with their front segments curled under; at the end of a fortnight they were sufficiently grown to show their distinctive characters very well: at the end of another week, varieties in their colouring began to appear, and from this time they were generally in straight postures on their food-plant, and, even when disturbed from it, they remained rigid, as if feigning death.

When full-grown, the larva is nearly three-quarters of an inch in length; though convex both above and below, yet its shape appears a little flattened; the broadest segment is the ninth, from which those in front taper very slightly towards the head, which is the smallest segment, and is indented on the crown; the last four segments are also very little tapered until near the anal tip; all along the sides, the inflated spiracular ridge is interrupted at each segmental division, and there are four sub-dividing wrinkles at unequal distances on the back, and twelve at equal distances on the belly, of each segment. The ground colour, according to the individual, is either brownish grey or reddish or ochreous brown: the head, dark in the centre, is brown, and freckled with darker at the sides; the sub-dorsal line begins a little below the crown of each lobe, and continues very distinct to the end of the fifth segment, the dorsal line beginning on the second segment, and continuing distinct for the same distance, both being pale ashy or ochreous in colour; from thence to the tenth segment both dorsal and sub-dorsal lines generally become so suffused in their course as to be but partially visible, and, in some instances, hardly to be traced through the brown bands which cross each of those segments, namely, a narrow band in front, and a broad one on the hinder part, leaving between them but a small space of the ground colour; on the last four segments, however, the lines are more distinct. At the end of the fifth segment on either side is a conspicuous round black spot near the sub-dorsal region, followed in some instances by another, a trifle smaller, on the end of the sixth. In segments five to nine, inclusive, the back of each bears the following details, composed chiefly of brown freckles, more or less confluent, viz.: on the dorsal region in front of each, two simple leaf-like shapes of darkish brown, pointing backwards, united at their base but diverging near their tips, which end at the anterior pair of tubercular black dots; on the hinder part of each of these segments are equally wide dorsal shapes of brown, merged together at their base, but soon separating into Vs with double side strokes, the outer stroke of each pair being longer than the inner, and reaching to the side, the central space between the inner strokes mostly filled up with the same brown colour until near the anterior pair of dots, where it fades away; the posterior pair of black dots just within the outer strokes, and not far from the segmental division. Instances occur where these outer oblique dark strokes are margined a little way on their course by pale ashy or ochreous. The ninth segment is paler than the others, and the tenth paler still; and on the back of the three hinder segments, the markings are very simple rudiments of the preceding details. The sides are throughout clouded and streaked with darkish brown, and on the thoracic portion a strong dark brown line borders the pale sub-dorsal below; the spiracles are of the ground colour, ringed with darker brown. The belly of each segment is darkish grey-brown at the sides, with a paler ashy-tinted pear-shape in the middle, outlined with dark brown, and on the narrowest part of this pear-like outline, is placed on each side a conspicuous blackish spot; a whitish ashy stripe runs down the centre, widening at the end of each segment, and interruptedly outlined with blackish, most strongly at its widest part.

The most noticeable variety among the larvæ I had, was of a pale grey ground colour, in which the dorsal line could be distinctly traced throughout, though but little paler than the ground, and (as in many other species of *Acidalia*) was strongly bordered at the beginning of each segment with a short black mark (and this again, *in one instance*, with a white mark), these black marks, becoming more and more developed towards the twelfth segment; the dorsal markings down the back but thin and slight imitations of those described above, and none of them clouded or merged together; the anterior pairs of tubercular dots black, and the hinder pairs white, finely ringed with black.

The pupa is $\frac{5}{16}$ inch in length, rather stout in proportion, broad at the thorax, the abdomen tapering rather suddenly to a point which terminates in six minute bristles, curved at their extremities; its colour, ochreous-brown, broadly marked with black on the thorax and back of the abdomen, the wing covers being delicately striated with dark brown.—William Buckler, Emsworth: *December*, 1872.

*Captures of Lepidoptera in* 1872.—The following is a list of a few of the Lepidopterous insects I observed in this district, or reared, during the wretched season of 1872. "Sugaring" was a complete failure nearly the whole of the year, and, for the most part, collecting of any kind was so much wasted time.—*Vanessa cardui*, Clare Hill; *Lycæna Arion*, Mr. Merrin again sent me eggs from Gloucester, but I had no more success with them than in former years,— the economy of this species still seems as great a mystery as ever; *Sesia bembeciformis*, common on poplar trunks at Birkby; *Arctia mendica*, not uncommon at Grimescar; *Amphydasis prodromaria*, produced from larvæ obtained by beating in Sherwood Forest during the previous year; *A. betularia*, one of the black variety, reared; *Boarmia roboraria*, one ♀ specimen from eggs sent me by Mr. J. P. Barrett, from New Forest moths; *Acidalia trigeminata* and *holosericeata*, also bred from larvæ sent by Mr. Barrett; *A. emutaria*, seven specimens emerged in August from eggs sent from Sheerness, early in July, by Mr. J. J. Walker,—the remainder of the larvæ are now hibernating (when fresh, the pink bloom on the wings of this species is most beautiful); *Scodiona belgiaria*, in the larval state, Crosland Moor; *Larentia cæsiata*, common on Norland Moor; *Emmelesia decolorata* and *Melanippe galiata*, not so common as usual; *Hypsipetes impluviata*, bred, larva from alder the previous autumn; *Cidaria immanata* and *Pelurga comitata; Ptilophora plumigera*, reared several specimens from eggs sent by the Rev. T. W. Daltry, of Madeley, the larvæ fed on sycamore; *Notodonta carmelita*, Mr. W. C. Marshall sent eggs from Cumberland moths, but the young larvæ died off miserably, though constantly supplied with fresh birch leaves; *N. dromedarius*, bred, larvæ from birch in Black Fir Wood the previous autumn; *Cymatophora flavicornis*, common on birch trunks in March, Black Fir Wood; *Leucania littoralis*, bred, larvæ from Wallasey sand-hills, fed readily on common field grasses; *Miana literosa*, Grimescar; *M. arcuosa*, very abundant amongst *Aira cæspitosa*, at Grimescar; *Agrotis agathina*, Mr. Norman sent larvæ from Forres, but, although some seemed to go down all right, no moths appeared,—does anyone succeed with this species? *Triphæna orbona, var. Curtisii*, reared a beautiful series from eggs sent by Mr. Norman, the majority of the specimens turning out to be the dark form; *Orthosia ypsilon*, larvæ from poplars at Clare Hill; *Xanthia citrago*, reared a nice series from larvæ sent from Barnsley; *Tethea subtusa*, larvæ common on poplars at Clare Hill and Birkby; *Hecatera dysodea*, a nice series from larvæ sent me from Cambridge; *Polia flavocincta*, larvæ common on "Everlasting pea," in the garden at Clare Hill, moths in the autumn; *Dasypolia Templi*, one specimen in the stone quarries at *Denby Dale; Ebulea sambucalis; Scopula lutealis*, in profusion at Grimescar; *Eudorea cembralis; Phycis carbonariella*, Norland Moor.—Geo. T. Porritt, Huddersfield: *January 8th*, 1873.

*Lepidoptera observed in Sussex during* 1872.—During the whole of the year, *Lepidoptera* were exceedingly scarce. Most of the insects mentioned in the following notes occurred singly. Sugar was, in many instances, a complete failure. *Leucophasia sinapis*, near Hailsham, not uncommon. *Colias Hyale*, only one specimen, near Lewes. *Melitæa Athalia*, a specimen near Battle, new locality. *Syricthus*[*] *alveolus*, a specimen of the variety *lavateræ*, near Battle. *Chærocampa porcellus*, a specimen near Lewes. *Procris Geryon* and *globulariæ*, near Lewes, June. *Calligenia miniata*, *Lithosia mesomella*, and *complana*, not uncommon, near Battle. *Lithosia aureola*, one at sugar, Battle, June 15th. *Lithosia griseola* and *stramineola*, Lewes, in the same spot, the latter scarce. *Epione advenaria*, near Hailsham, sparingly. *Boarmia consortaria*, Battle, one at dusk, May 25th. *Tephrosia extersaria*, Battle, May 25th to June 15th, not uncommon, on sugar and at dusk, flying high up over birches; also occurred near Lewes. *Geometra papilionaria*, Battle, a few specimens. *Asthena sylvata*, Battle, rare this year. *Macaria notata*, Battle, one specimen, May 5th. *Melanthia albicillata*, near Lewes, at dusk, a few specimens. *Melanippe hastata*, near Hailsham, not uncommon. *Platypteryx lacertula*, Battle. *P. hamula*, near Hailsham, one specimen. *Cymatophora fluctuosa*, Battle, one on sugar. *C. or*, near Lewes and Battle, singly. *Diphthera Orion*, Battle, a few at sugar. *Acronycta leporina*, Battle, one at sugar. *Aporophila australis*, near Lewes, very scarce this year. *Luperina cespitis*, near Lewes, very scarce this year. *Noctua Dahlii*, Battle, on flowers of *Teucrium*, &c. *Cerastis erythrocephala*, one or two specimens occurred in the autumn. *Hoporina croceago*, near Lewes, on sugar, October. *Epunda lutulenta*, near Lewes, one on ivy bloom. *Phlogophora empyrea*, near Lewes, not uncommon, October. *Aplecta tincta*, Battle, a few at sugar and bramble blossom. *Hadena genistæ*, Battle, on sugar. *Cucullia asteris*, one specimen at Battle. *C. chamomillæ*, Battle, one specimen, May 20th. *Erastria fuscula*, Battle, one at sugar. *Herminia derivalis*, Battle. *Ennychia octomaculalis*, near Battle, &c. *Agrotera nemoralis*, a specimen in my collection taken by a friend, near Hailsham, on May 20th. *Crambus falsellus*, near Lewes, over an old thatch, July. *C. pinetellus*, Battle, singly. *Phycis betulella*, Battle, one specimen, July. *Achroia grisella*, Battle, in an old hive; I have some larva now feeding. *Sarrothripa Revayana*, near Lewes, one at sugar. *Tortrix dumetana*, near Lewes, July, not uncommon.—J. H. A. JENNER, Lewes: *January* 23*rd*, 1873.

*Tortricidæ at Guestling.*—I have done little in this group, but the following are the best I have hitherto met with:—*Halias prasinana*, *quercana* and *chlorana*; these all occur here, but only the first in any quantity: *Sarrothripa Revayana*, scarce; *Tortrix cratægana*, one specimen; *T. sorbiana*, very abundant, flies in a frantic manner at dusk; *Dichelia Grotiana*, not uncommon, sometimes comes freely to sugar; *Leptogramma literana*, *Ditula semifasciana*, *Penthina salicana*, all these are scarce; *Sericoris littorana*, a few at Pett. *Euchromia purpurana*, *Sciaphila sinuana*; I met with single specimens of these this summer, the former at Pett. *Stigmonota redimitana*, scarce. *Lobesia reliquana*; I meet with a few specimens of this pretty species every spring. *Eupæcilia udana* and *E. rupicolana*; I have taken single specimens of both these species, the latter, which I took this autumn, was flying in a wood glade, where hemp-agrimony (*Eupatorium cannabinum*) was growing pretty freely. *Eupæcilia curvistrigana*; I was fortunate enough to take three specimens this year in wood paths (August 6th); I took a single specimen some years ago. *Cochylis stramineana* and *C. inopiana;* I have only met with single specimens of these two species.

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[*] *Syricthus*, Hope, 1837 (*Dynastidæ*); Boisd., 1840.—E. C. R.

The above is but a meagre list of species, and the more so as so many are represented by single specimens; I doubt not, however, that a want of perseverance in searching for them may account for this, although I believe the *Tortricidæ* are generally scarce here.—E. N. BLOOMFIELD, Guestling Rectory: *November 7th*, 1872.

*The New Sugaring Lamp.*—In recommending the new Sugaring Lamp in the January No. of this Magazine, I quite unintentionally omitted saying that the idea originated with Dr. White. I must apologize for this omission.

It may be quite true that an ordinary tinsmith can adapt the shilling "sponge lamp" to a sugaring lantern, but the circular form is too clumsy, and cannot be made to fit a flat lamp for the pocket. The reservoir in my lamp is quite shallow, flat, with square sides, and slides into a groove just above the match drawer; the ordinary shilling lamp, moreover, has no rack and pinion *to raise or lower the wick*, but is merely furnished with a slide to regulate the flame.

Finally, my burner, owing to this improvement, gives a larger light than the other, and is exceedingly cleanly to manipulate.—GEO. NORMAN, Cluny Hill, Forres, N.B.: *February*, 1873.

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ENTOMOLOGICAL SOCIETY OF LONDON.—ANNUAL MEETING, *27th January*, 1873.—Prof. WESTWOOD, President, in the Chair.

The following gentlemen were balloted for and elected Members of Council for 1873: Messrs. H. W. Bates, Butler, Grut, McLachlan, Müller, S. S. Saunders, F. Smith, Stainton, S. Stevens, Verrall, C. O. Waterhouse, Weir, and Westwood.

The following Officers for 1873 were subsequently elected, viz.: Prof. Westwood, President; Mr. R. McLachlan, Treasurer; Messrs. F. Grut and G. H. Verrall, Secretaries; and Mr. Janson, Librarian.

The President read an address on the progress of Entomology during the past year, and the business of the meeting concluded with the usual votes of thanks to the outgoing officers.

*3rd February*, 1873.—HENRY W. BATES, Esq., Vice-President, in the Chair.

Mr. William Cole was elected a Member.

Mr. F. Smith exhibited some Indian *Hymenoptera*, collected at Nuddea, in the district of Minchindipore (about 80 miles from Calcutta). Amongst them were a new species of *Astata*, and four or five beautiful species of *Nomia*.

Mr. McLachlan exhibited the quadrangular case of the larva of a Trichopterous insect, together with the larva itself preserved in glycerine. These had been placed in his hands by the Rev. A. E. Eaton (who found them in the Dove, a swiftly running stream in Derbyshire), and were supposed to belong to *Brachycentrus subnubilus*, as the larvæ of that species are known to manufacture quadrangular cases; but some doubt was expressed as to the species.

*Mr. Champion* exhibited specimens of a large species of *Pulex*, found by *Mr. J. J. Walker* in a mouse's nest in the Isle of Sheppy. Mr. Bird exhibited a *specimen of Cerastis erythrocephala*, from Darenth Wood.

Mr. Meldola exhibited a living Myriopod *(Spirobolus)* from San Francisco, and eggs of *Phyllium pulchrifolium* from Java.

Mr. Pascoe, referring to an observation by Mr. F. Walker in "The Entomologist," that the Fire-flies *(Luciola italica)* seen in abundance in Italy, had probably entered that country from the East, and were hindered by the Maritime Alps from occupying the Mediterranean coast of France, remarked that he had seen the insect in abundance in France between Cannes and the Var, and wished to ascertain if any Entomologist had noticed it farther westward in France.

Mr. A. Müller made some further remarks respecting certain pouch-galls found on the leaves of cinnamon from Bombay, exhibited to the Society in March last, which shewed that the question as to the originators of the pouch-galls could not be settled satisfactorily without further evidence.

The Rev. Mr. Eaton stated that he possessed a specimen of a *Trombidium* which had been taken by Mr. Benjamin Lee Smith in September last, in Spitzbergen; and also read a paper on the Trichopterous Family *Hydroptilidæ*.

Mr. A. G. Butler communicated a Monographic List of the species of the genus *Gasteracantha*, or Crab Spiders, with descriptions of new species.

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## ADDITIONS AND CORRECTIONS TO THE LIST OF BRITISH *SYRPHIDÆ*.

BY G. H. VERRALL.

Since my last communication to this Magazine (February, 1871) on the British species of *Syrphidæ*, I have observed several additional species, including four new to science, and have a few notes on others for publication.

1. Ascia quadripunctata, Meigen.—I am convinced that this is only a variety of the species generally called *floralis*, Mg., as I have captured the females on several occasions in company with ordinary *A. floralis* in marshy lands.

2. Syrphus confusus, Egger.—This species, which I originally added to the British list from a specimen caught in this neighbourhood, I now believe to be only a variety of *S. albostriatus*, Fallén; but, while the typical *albostriatus* abounds in some large woods, where the males are most indefatigable hoverers, the typical *confusus* is more confined to gardens and meadows.

3. Syrphus nigricornis.—When at Loch Rannoch in June, 1870, I captured six specimens (4 ♂, 2 ♀) of a species which is, without much doubt, the *S. obscurus* of Zetterstedt's Insecta Lapponica (1838), but as the name *obscurus* was pre-occupied by Say (1824) for an American species, a new name is required, and I therefore propose that of *nigricornis*. The species is allied to S. lunulatus,

but is blacker and rather narrower, the legs being much blacker, and the antennæ quite black instead of yellowish-black, the pubescence on the scutellum is all black, instead of all yellow, and the yellow spots on the abdomen never extend to the edge.

4. SYRPHUS ANNULATUS, Zett.—I am now able to describe both sexes of this species for the first time, as it was originally described from the female, and only that sex has hitherto been recognised in connection with the name. I can, however, find no satisfactory distinction in the description of the male of *S. vittiger*, but the female is readily distinguished by the pale base of the hind femora. The species belongs to the "*ribesii*" group, from which I omitted it before, as Zetterstedt places it next to *S. cinctus* and *cinctellus*, which have the abdomen very narrow. It need only be compared with *S. lineola* and *vittiger*, as it has a black line down the middle of the epistoma; but, while the male *annulatus* has the legs luteous, with the basal half of the anterior femora black, and the hind legs all black except the knees, and the female has the legs nearly all luteous, except a broad black ring on the hind femora, which leaves the basal two-fifths of the femora luteous, the male *lineola* has the legs black, with the anterior knees and base of tibiæ luteous, and the female has them luteous, with the basal third of the femora black, and the hind legs all black except the reddish knees. *Vittiger* is especially stated by Zetterstedt to have the hind femora black, with only the tip yellow, and he knew the female of *vittiger* from several specimens, though he did once (Dipt. Skan. ii, 715) refer to it a specimen having the hind femora pale at the base, which he subsequently (*l. c.* viii, 3138) considered *annulatus*. *Vittiger* has been described by Schiner in his Fauna Austriaca, and he speaks of the hind femora being black, except at the tip, without any reference to sex. I can, however, find no character by which I am able to separate the males, nor have I seen any males which I believe to be distinct, though I have seen some females answering to the description of *vittiger*. In case the two names should be synonymous, *annulatus* has the priority by some years. I found it in some abundance on Shirley Common, on May 5th, 1872, about some furze bushes; I fancy, from the fragility of the specimens, that they had only recently come to maturity. I caught one female at Rannoch in June, 1870, and I have seen eight specimens (2 ♂, 6 ♀) caught by Dr. Buchanan White at Braemar, in 1871.

5. Syrphus vittiger, Zett.—If distinct from the last species, is also British, as I refer to it two females caught by Dr. Buchanan White at Braemar in 1871, and a female by myself at Rannoch in 1870.

6. Syrphus latifasciatus, Mcq.—*Abbreviatus*, Zett., must be added to the synonyms of this species, but *excisus*, Zett., may be withdrawn; as, according to Loew, it is a distinct species. Under no circumstances can the name *affinis* stand, as there is a prior *affinis* of Say.

7. Syrphus barbifrons, Fall.—In my previous notes, I added to the British list *Melanostoma barbifrons*, on the authority of two (♂) specimens belonging to Mr. B. Cooke; since then I have examined a series of a *Syrphus* that I caught at Rannoch in 1870, which I considered to represent the *Scæva arctica* (♂) and *nitidula* (♀) of Zetterstedt. I am, however, informed by Loew that it is the species known on the continent as *Melanostoma barbifrons*, Fall., and that the species I had formerly thought *barbifrons* is new to science. The species I caught at Rannoch is a true *Syrphus*, but the epistoma of the male is very much darkened, so that some specimens might readily be thought to belong to *Melanostoma*. It belongs to the "*umbellatarum*" group, in which it is distinguished by its darkened epistoma, which, however, is always luteous between the antennæ, by its dark legs, and by the very small pair of spots on the second abdominal segment. It is most allied to *Syrphus lasiophthalmus* and *Melanostoma quadrimaculatum* (the species I had previously considered *M. barbifrons*); but *S. lasiophthalmus* has the eyes slightly hairy, the epistoma distinctly luteous on the sides, the abdominal spots all larger, and the pubescence on the breast-sides yellow instead of black, while *M. quadrimaculatum* has the eyes distinctly hairy, the epistoma quite black, and the abdomen marked with only four spots in the male, and unmarked in the female. Zetterstedt himself admits that his *S. nitidula* is the female of his *S. barbifrons*, and I think his *S. arctica* must represent the form of the male that I have caught, while his *S. barbifrons* would represent the more common form on the continent, in which the basal pair of abdominal spots are wanting. In opposition to this, however, Bonsdorff professes to have caught both sexes of *S. arcticus* and *barbifrons*. The species was one of the commonest at Rannoch.

**8. Syrphus punctulatus**, *sp. n.*

♂ ♀. *Oculis sub-hirtulis, epistomate flavo, linea media nigra, genis nigrescentibus, fronte æneo-nigra, tomentosa; antennis nigrescentibus, articulo tertio subtus basi luteo; thorace æneo, nitidulo, punctato, scutello flavido, pilis omnibus nigris; abdomine lineari, maculis transversis semi-circularibus luteis; pedibus nigrescentibus, genubus anterioribus (sæpissime tibiis totis, femorumque dimidio apicali) luteis; alis sub-hyalinis, stigmate cinereo. Long.* 4¼—4¾ *lin.*

♂. Very closely allied to *S. lasiophthalmus*, Zett., but the eyes are slightly less hairy, the epistoma is always covered with yellow *tomentum*, except on the well-defined, rather shortened middle line, the middle knob seems rather more defined, the cheeks are darker and apparently more descending, the long black hairs on the occiput curved forward over the eyes are more numerous, and on the vertex nearly all the hairs are black; the antennæ have the third joint luteous at the base beneath, and also rather more pointed and angulated; the frons is more covered with *tomentum;* the thorax is not quite so shining, the punctuation being larger and coarser, the pubescence is all luteous, and not quite so abundant and rather shorter; the scutellum is yellower, its pubescence less abundant, shorter, and all black. The abdomen is less pubescent; the first pair of spots is larger and more triangular, running almost up the edge towards the basal corners; the spots on the third and fourth segments show a similar tendency, and are almost semi-circular, their upper-side being straight, with the hinder angles rounded off, and they run quite up to the basal corners of the segments; as these spots curve off so much before reaching the edge, the yellow hairs standing out from the edge at the basal corners of the segments are much fewer than in *S. lasiophthalmus*, since they follow the ground colour. The anterior legs are generally yellow, with only the basal half of the femora and the tarsi black, and the hind legs black, with the knees and base of tibiæ luteous, but they vary up to being almost as black as in *S. lasiophthalmus.*

♀. Differs from *S. lasiophthalmus* like the male, in the antennæ, epistoma, cheeks, pubescence, punctuation of thorax, &c., and on the scutellum the pubescence is entirely black, while in *S. lasiophthalmus* it is usually entirely yellow; in many of the specimens I possess, instead of the usual coppery longitudinal lines on the thorax, there appears a most peculiar coppery filagree work on the disc, arising, I presume, from the drying of the internal juices; the abdominal spots curve upwards considerably as they approach the edge, the second and third pairs being more rounded behind, and nearer the fore-margin.

This species has hitherto been confounded with *S. lasiophthalmus*, from which I consider it perfectly distinct; I have captured it in abundance near Shirley Common in May, and have also taken it at the Plashett Wood, near Lewes, at Boxhill and here (Denmark Hill).

**9. Syrphus compositarum**, *sp. n.*

♂ ♀. *Oculis nudis; epistomate flavido-albo, peristomate lineaque media nigris; antennis nigrescentibus; fronte flavido-pollinosa, macula super antennas nigricante; thorace sub-nitente* (♂), *aut cærulescenti-æneo nitido* (♀), *scutello flavo, nigro-piloso; abdomine lineari, maculis bis tribus transversis, linearibus, sub-quadrangulis, stramineis; pedibus nigrescentibus, geniculis anterioribus testaceis; alis sub-vitreis, stigmate pallido. Long.* 4½—5 *lin.*

♂ ♀. This species belongs to the group containing *S. umbellatarum*, F., *lasiophthalmus*, Zett., *punctulatus*, Verr., *decorus*, Mg., *guttatus*, Mg., *flavifrons*, Verr., *nigritibiis*, Rond., *barbifrons*, Fall., and *auricollis*, Mg. From *umbellatarum* (its nearest ally) it is distinguished by its smaller, sub-quadrate basal pair of abdominal spots, which do not reach the edge; by the almost entirely black-haired scutellum; by the blackish-brown anterior tibiæ and tarsi, and blacker femora; by the duller thorax of the male; by the broader epistomatal line; by the more free second and third pairs of abdominal spots; by the black, instead of yellow, genitalia; by the broader dark middle line on the frons of the female, and smaller black spot above the antennæ; and by the thinner hind metatarsus, &c.: from *lasiophthalmus* and *punctulatus*, the bare eyes, paler epistoma, yellow cheeks, yellower scutellum, paler abdominal spots, and slight pubescence, at once distinguish it: *decorus* has the antennæ entirely, and the legs nearly all, yellow, &c.: *guttatus* and *flavifrons* are smaller, and have the epistoma and frons all yellow, the scutellum pale-haired, and have traces of a pale line down each side of the thorax: *nigritibiis* and *barbifrons* have the epistoma and front nearly all black, and the basal pair of abdominal spots, either very small or altogether wanting: and *auricollis* in the variety *maculicornis*, Zett., has the antennæ pale beneath the third joint, and has the abdominal spots trapezoidal or triangular, and much larger and yellow; its legs are also considerably more yellow.

As far as any previous notice of this species is concerned, I think it must be the *Scæva umbellatarum* of Zetterstedt, as he says (Dipt. Skan. ii, 734) "thorace sub-opaco ♂—pedibus nigris, geniculis an-"terioribus testaceis,—scutellum fusco-pilosum;" subsequently (*l. c.* viii, 3142) he says "thorax etiam in ♂, potius nitidus quam opacus "dicitur," which is exactly the case with my specimen; afterwards (*l. c.* xiii. 5098), he appears to have noticed the true *umbellatarum*, as he records some specimens from Gothburg and Holland, with the thorax shining in both sexes. Loew informs me that specimens sent him as types by Zetterstedt were true *umbellatarum*. The original description of Fabricius (Ent. Sys. iv, 307) proves his species to have been the one I have considered *umbellatarum*, as he says "Pedes antici testacei, "femoribus basi nigris, postici nigri." Schiner (Faun. Austr. i. 308) probably had *compositarum* before him, when he refers to the specimen separated in Schummel's collection as *S. albeguttatus*.

This species was abundant at Rannoch, in June, 1870, where I also caught one melanoid female: I have never seen *S. umbellatarum* from the north, but have caught it rarely at Lyndhurst, Penzance, and here (*Denmark Hill*).

### 10. SYRPHUS FLAVIFRONS, *sp. n.*

*♂. Oculis nudis; epistomate toto flavo-albo; antennis nigrescentibus; fronte flava, angulo superiore angustè nigrescente; thorace æneo, nitido, scutello pallido, pilis flavo-albis; abdomine lineari, maculis bis tribus flavis, liberis; pedibus nigris, genubus luteis, tibiis tarsisque anterioribus obscuris; alis sub-hyalinis, stigmate fusco. Long.* 3¾—4 *lin.*

♂. Smaller than *S. umbellatarum* and considerably resembling *Platychirus scutatus* ♂; eyes bare, epistoma yellowish-white, yellower on the knob, and somewhat obscurely darkened on the sides of the mouth, there are several mostly pale hairs on the sides of the disc and close to the lower part of the eyes, the upper angle of the mouth is blackish; the cheeks are clear pale yellow, with pale pubescence; the frons is yellow, with just the upper angle blackish, it is clothed with a tolerable number of longish black hairs, which, however, do not spread over its middle; the vertex is rather elongate-triangular, æneous, with longish hairs, generally black, but sometimes those behind are luteous; antennæ dull blackish, third joint short ovate.

Thorax shining æneous, finely and very sparingly punctate, with faint indications, especially in front, of two dull dark lines down the middle of the disc, the pubescence all silky whitish-yellow; a yellow line along the sides forms a distinct spot on the shoulders, and a less distinct one on the upper corner of the hinder angles; the breast-sides have a whitish pubescence; the scutellum is bright yellow, with a slight æneous tinge, and the extreme corners æneous, it is clothed with not very abundant long silky whitish-yellow hairs; alulæ and their fringes yellowish-white; halteres yellow, obscure at the base. Abdomen linear, dull velvety-black, faintly transversely rugose; about the middle of the rather long second segment near the edge on each side is a very small distinct yellow spot; near each basal corner of the third segment, but not touching the margin at all, is a larger irregularly quadrate yellow spot; these spots are distant from each other rather less than their own breadth; on the same part of the fourth segment are similar but rather narrower spots, and the basal corners of the fifth segment are entirely yellow; the pubescence down the edge of the abdomen is whitish-yellow, rather long, decreasing in length to half way down the fourth segment, after which it is short and black; on the disc, the pubescence is slight and obscure, but the longer hairs seem pale, and the others rusty-black; the belly has only the ends and edges blackish, all the disc being whitish, with obscure markings on the sides of the second and third segments; the genitalia are very small and blackish. Legs dull black, the tips of the anterior femora dull luteous, the knees brighter, the hind knees very narrowly dull luteous, the anterior tibiæ and tarsi brownish, with a tendency to yellow at their tips, the hind trochanters somewhat luteous; there is a moderate whitish-yellow pubescence behind the anterior femora; the hind metatarsus is long, scarcely thickened. Wings slightly greyish, stigma distinct, brownish.

I caught three males of this species at Rannoch in June, 1870. It is, apparently, most allied to *S. guttatus*, Meigen, but I am informed by Loew that there are several distinctive characters; according to descriptions, *S. guttatus* has a much more conspicuous, sharply-defined line down the sides of the thorax, and a pair of conspicuous whitish *spots before the* scutellum, and paler legs than *flavifrons*.

(*To be continued*).

# DESCRIPTIONS OF A NEW GENUS AND TWO NEW SPECIES OF *COLEOPTERA* FROM JAPAN.

BY THE REV. H. S. GORHAM.

Since the publication of my paper on the *Endomychidæ* of Japan in the February No. of this Magazine, I have seen, in Mr. George Lewis's collection, two or three forms which either belong to this family, or, like *Symbiotes* and *Mycetæa*, may be associated with it. I now offer a description of a genus belonging to the true *Endomychidæ*. Another interesting genus allied to the genera mentioned must wait for closer investigation, and will probably require to be dissected.

## Family ENDOMYCHIDÆ.

### Tribe *DAPSINI.*

### RHABDUCHUS, *genus novum.*

*Antennarum clava articulo primo incrassato et interne dentato, sequentibus duobus multo latiore. Palporum articulus ultimus fusiformis. Prosternum retrorsum angustatum, coxas superans, medio concavum, apice rotundatum. Mesosternum oblongo-quadratum. Pronotum lateribus marginatis ut in Stenotarso, basi lineâ transversâ impresso, angulis posticis productis. Pedes longi, tarsi graciles, posteriores elongati. Corpus oblongum.* Type *R. denticornis, sp. n.*

The singular insect for which I propose the above genus would seem, by the structure of its antennæ, allied to *Œdiarthrus*, Gerst., and also to have a general affinity with *Mycetina* and *Stenotarsus*. The remarkable form of the ninth joint of the antennæ, however, and the form of the thorax, combined with its long thin legs, are an association of characters dissimilar to anything yet described in this group. I regret having been unable to give the form of each part of the mouth, there being but a single specimen, which is apparently a female, the abdomen consisting of five segments.

RHABDUCHUS DENTICORNIS, *sp. n.*

*Testaceus, sub-nitidus, pube brevi parce vestitus, crebre at obsolete punctatus, antennis nigris, capite thorace pedibusque infuscatis.*

*Long.* 2 *lin.*

Oblong, head fuscous, crown smooth. Antennæ more than half as long as the body, entirely fuscous black, basal joint ovate, second short, about as long as wide, 3 a little longer and equal to 7; 4, 5 and 6 equal to each other, and shorter than 3; joint 8 short, equal to 2; 9 equal in length to the two preceding, triangular, the inner side with an acuminate tooth; 10 smaller, triangular, internally acuminate at the apex; 11 elongate, rounded externally, the inner edge straight. Thorax widest at the base, the posterior angles being produced outwards into an acute angle; the sides sinuate; anterior angles rectangular, deflexed, from these the sides are rounded rather suddenly, becoming almost parallel again before the base; margined with a strongly impressed line, which does not meet the front margin,—the space between this line and the side being flattened and widest in front; base with an impressed transverse line, and the usual sulci very short; disc fusco-piceous. Elytra a little wider at the shoulder than the thorax, thence widened evenly to beyond the middle, narrowed gradually to the apex, of a uniform testaceous colour, clothed with a very fine pubescence of the same tint, very obsoletely punctured. Legs pitchy-red; apex of the femora and tibiæ darker.

Of this curious species I have seen but a single specimen, which is in Mr. G. Lewis's collection from Nagasaki.

## Family CUCUJIDÆ.

### Genus INO, Castelnau.*

INO QUADRINOTATA, *sp. n.*

*Nigro-picea, nitida; capite, thorace, abdomineque crebre, elytris parcius, punctatis; his maculis duabus albidis, anteriore oblongâ; antennarum basi, tibiis tarsisque rufis.* *Long.* 2 *lin.*

The species now described adds another to the tropical forms already known to exist in Japan. Of the four species of *Ino* described, two are from New Guinea, one from Madagascar, one from Guadeloupe. *Ino quadrinotata* would seem allied to *I. trepida*, Pascoe.

Head as wide as the thorax, eyes rather prominent. Sides of the thorax a very little widened from the base to about one-third of their length, thence narrowed strongly, and in a straight line to the base, the angle at which they would meet being rounded off, so that the width of the base is equal to that of the straight portion from the anterior to the middle angle. Antennæ a little longer than the head and thorax, their basal joint moderately swollen and red, the third half as long again as second, both of which are rufo-piceous; 4, 5 and 6 bead-shaped, a little longer than wide; 7—10 widest at apex; 11 oblong. Elytra covering more than half the abdomen, but leaving the two last segments and part of the third from the apex exposed, widened from the base for two-thirds their length, thence rounded into the suture; each with two pale spots, the anterior on the shoulder and oblong, the posterior near the apex and rounded, but both are ill-defined. The abdomen is widest where it quits the elytra, which it there equals in width, and its margin is rather elevated. Femora stout, pitchy-black, tibiæ pitchy-red, tarsi red.

Six individuals taken by Mr. G. Lewis are before me.

Generally distributed in Kiushiu; taken by beating old faggots, and once in great profusion, in May, under bark of the vegetable-wax tree.

Rusper: *March* 11*th*, 1873.

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* *1835:* INO, Leach, in *Lepidoptera*, 1819.—EDS.

## NOTES ON *HETEROMERA*, AND DESCRIPTIONS OF NEW GENERA AND SPECIES (No. 7).

BY F. BATES.

### METABOLOCERUS, *nov. gen.* (Sub-family *Ulominæ*).

♂. Near *Ulosonia* (Casteln.), differing in having the epistoma more broadly and somewhat more squarely truncated in front (the labrum being consequently more exposed), armed at or near the middle of the anterior border with a slender horn, more or less elongate and erect, and another, usually smaller and more pointed, or spine-like, at the inner corner of each eye; head not concave between the eyes; antennæ various, but usually shorter, and with the outer joints more or less strongly triangular and transverse; prothorax produced in front with two or three more or less elongate horn-like processes, which are directed forwards over the head, the two outer longest and stoutest, and continuous with the lateral margins of the prothorax or not; the central one (where it exists) usually smaller and much more slender; tarsi relatively somewhat shorter and stouter; body generally narrower, more parallel, a little less depressed, pilose or not.

♀. Head and prothorax unarmed, the latter rather deeply arcuate-emarginate in front.

This genus cannot be confounded with *Antimachus*, Gistl, on account of its differently formed head (especially the epistoma), antennæ, mentum, &c., whilst the peculiar armature of the prothorax will readily separate it from all the other genera of its sub-family.

M. PILOSUS, *sp. n.*

Oblong, sub-parallel, pitchy-brown, shining, sparsely clothed with rather long, erect, simple hairs; epistoma armed in the centre of its fore margin with an elongate, nearly erect, slender, cylindrical horn, obtusely pointed at the apex; a short, sloping, conical, pointed tooth arises from the inner corner of each eye; antennæ moderate, sparsely spilose, joints 6—10 triangular, perfoliate; prothorax depressed, sub-quadrate, a little wider than long, sides a little narrowed in front, a distinct median furrow, and an impression at each side the middle of the base, sparingly and irregularly punctured, the punctures large and much scattered near the sides; the anterior processes (or horns), two in number, arising within, and distinct from, the lateral margin, elongate—extending beyond the anterior margin of the head— moderately stout, sub-cylindric, slightly curved, slightly converging, obliquely truncated, and faintly notched at the apex; the space between the bases of these processes is moderately excavated, or concave; elytra seriate-punctate, intervals faintly and not closely punctured: the 1st, 2nd, 3rd, and 5th costiform for about one-fourth to one-third their length from the apex; the 7th, 8th, and 9th costiform throughout their length; the 8th extending to the humeral angle, where it unites with the 7th and 9th; apically, the 3rd, 7th, and 9th are united, the 5th (which is the shortest of all) being enclosed by the 3rd and 7th, and the 8th by the 7th and 9th; under-side sparsely pilose, flanks of prothorax and sterna sparingly and rather coarsely punctured; legs shining chestnut-red.

Length from apex of thoracic process to apex of elytra, 5 lin.; width of elytra 1¾ lin.

♀. Smaller and shorter (long. 4¼ lin.), head and prothorax simple, the latter rather deeply arcuate-emarginate in front, and with the median furrow apparent only at the base; elytra with the 7th, 8th, and 9th intervals only faintly costiform.

*Hab.*: New Granada; two examples, ♂ and ♀.

M. CLYPEATUS, *sp. n.*

Smaller than the preceding, the epistomatal horn situated on the disc (not at the middle of the fore margin), and, together with the horn arising from the inner corner of each eye, moderately elongate, semi-erect, sub-cylindric, obtuse at apex; antennæ short, joints 7—10 rather strongly transverse, very moderately perfoliate; prothorax decidedly transverse, a little convex, moderately punctured, the punctures largest near the sides, an impression at each side the middle at the base, but without any trace of a median furrow, the anterior processes three in number, two at the sides—arising within, and distinct from, the lateral margin—robust, moderately long (extending over the head to a little beyond the level of the insertion of the antennæ), slightly converging, obliquely truncated, and distinctly notched at the apex; the 3rd is central, about one-third the length of the two others, cylindric, strongly compressed, rounded at apex; elytra seriate-punctate, almost obsoletely so at the apex, intervals (except the 7th, which is slightly elevated) flat, very minutely and very sparsely punctulate; flanks of prothorax with a few small, scattered punctures; legs shining chestnut-red; body hairless.

Length, 3½ lin.; width of elytra, 1⅓ lin.

*Hab.*: Cumana; a single (♂) example.

*var.?* BREVICORNIS.

In this, which I doubtfully consider as a variety of the preceding, or one in which the full development of the armature of the head and the prothorax has been arrested,—the three horns on the head are faintly represented by small conical tubercles; the three thoracic processes are much shorter, the two outer (which do not nearly extend to the level of the insertion of the antennæ) are stout, conical, and not at all convergent; the central one is reduced to a short, compressed, conical tooth; the rest entirely as in the typical form, save that it is smaller and shorter. Long. 3 lin.

*Hab.*: Cumana; a single (♂) example.

*M.* FRYI, *sp. n.*

*Entirely shining* rufous, with the legs and palpi yellowish; antennæ with joints

6—10 slightly produced (sub-serrate) within; epistoma armed in front with a short, sloping, strongly compressed, conical tooth, or horn; at the inner corner of each eye a short, spine-like horn, sloping towards the front; prothorax depressed, transverse, finely and not closely punctured, with several shallow impressions along the base, the median furrow faintly (except at the base) impressed; the processes in front three in number, the two lateral robust, continuous with the lateral margins of the prothorax, extending over the head to a level of the insertion of the antennæ, obliquely truncated at the apex, their inner side concave; the 3rd is central, compressed, sub-cylindric, of nearly equal length to the two outer; elytra seriate-punctate, obsoletely so at the apex, intervals very minutely and sparingly punctulate; flanks of prothorax rugosely punctured, but not closely so.

Length, 3½ lin.; width of elytra, 1⅜ lin.

*Hab.*: "Colombia;" a single (♂) example in the Collection Laferté.

This species differs sub-generically from those preceding in having the two outer thoracic processes continuous with the lateral margin of the prothorax.

## METULOSONIA, *gen. nov.*

Near *Peltoides*, and having quite a similar facies, but readily separable by the eyes being larger, wider, more prominent, and but slightly narrowed in the middle by a prolongation of the antennary orbits in front, or by an expansion of the cheeks behind; the head smaller and narrower; the antennary orbits smaller, narrower, less prominent, not angular, and not projecting laterally beyond the eyes; the prosternal process horizontal, acutely prolonged behind, and penetrating deeply into the mesosternum, which is vertical in front, and cleanly and deeply excavated in the form of a V. As secondary characters, the form is more elongate-oval, or elliptical; the median basal lobe of prothorax narrower, more prolonged, so that a straight line drawn from its lower edge would nearly include the hind angles; the 3rd joint of antennæ relatively shorter; and the prothorax has, near the sides, the larger scattered punctures characteristic of *Ulosonia* and the allied South American genera of this section of the sub-family.

The form of the head in this genus very closely approaches that in *Ulosonia*, but the epistoma is shorter, more broadly truncated in front, and not at all reflexed at the lateral borders; it is not concave between the eyes; it is unarmed, but there is a decided tuberculiform elevation near the inner margin of each eye. The form of the head in *Peltoides* more closely resembles that in *Alphitobius* than in either the present genus or in *Ulosonia*.

### Metulosonia Horni, *sp. n.*

Elongate-oval, pitchy-brown, glossy; head sparingly but rather coarsely punctured; epistoma finely and rather closely punctured; prothorax finely and not closely punctured, near the sides are some scattered, large, coarse punctures; a well-marked oblique impression at each side the median basal lobe, which has also an ill-defined, shallow depression on its middle; scutellum sparsely but distinctly punctured; elytra seriate-punctate, the punctures rather large, especially at the sides; intervals flat, faintly punctulate; under-side and legs dark reddish-brown, glossy, almost impunctate; flanks of prothorax faintly longitudinally wrinkled; abdomen a little coarsely (but not closely) punctured, and reticulate-rugose at the sides; prosternal process with a well-marked impressed line down the centre, between the coxæ, the end acutely pointed; intercoxal process somewhat rounded at apex. Length, 3¾ lin.; width of elytra, 1¾ lin.

*Hab.*: Panama; a single example.

### Metulosonia egaensis, *sp. n.*

Much smaller and relatively broader than the preceding, entirely reddish-castaneous, glossy, the entire punctuation finer; the prothorax a little less narrowed at the sides anteriorly, the front angles a little less prominent, and somewhat depressed, the median basal lobe not depressed on the middle; elytra wider behind the middle, the apex being consequently more broadly rounded; prosternal process a little more compressed behind the coxæ, the point less acute, the longitudinal central depressed line obsolete; intercoxal process narrowly rounded at the apex.

Length, 3⅙ lin.; width of elytra, 1½ lin.

*Hab.*: Ega, Upper Amazons; one example.

### Peltoides capensis (Dej. Cat., p. 220—*Oöpiestus*).

Size and general aspect of *P. senegalensis*, Cast.; the only differences I can detect are (in *capensis*) the stronger punctuation of the entire surface, both above and beneath, the rows of punctures on the elytra especially being larger; the prosternum longitudinally rugose, or finely plicate, before the coxæ, and the prosternal processes plain, not convex or sub-carinate down its length, and rather strongly and closely punctured. The antennæ appear somewhat shorter and stouter, but these organs vary in this respect in different individuals of *P. senegalensis*.

It will require the comparison of a number of examples to determine whether these slight differences are sufficiently constant to give them a specific value. At present, I possess but a single example of *P. capensis*, from Port Natal.

*15, Northampton* Square, Leicester:
*February, 1873.*

## DESCRIPTION OF *LYCÆNA ARTHURUS*, A NEW EUROPEAN BUTTERFLY.

### BY J. COSMO MELVILL, B.A., F.L.S.

LYCÆNA ARTHURUS, *sp. n.*

♂. *Alæ suprà violaceæ, subtus cinereo-fuscæ, ab L. Arione differentes ocellis omnibus absentibus, iis circa marginem exteriorem exceptis, nigris, maculis quoque discocellularibus bene utrinque definitis; corpus cæruleo-albescens.*

Habitat, Chamounix, Switzerland; one specimen alone captured, June 28th, 1872, by Miss Evelyn Melvill.

Expanse of wings, about 1″ 4‴.

The wings are violet-blue, with rather broad blackish hind-margins. The under-wings beneath are greenish at the base; fringe white; antennæ similar to those of *L. Arion.* Mr. A. G. Butler has examined the insect, and states his opinion that it is a "typical species," as it differs very much from all the known forms of *Arion*, its nearest congener. My sister, who captured it, informs me that its manner of flight was markedly more wild and irregular.

Manchester: *March*, 1873.

[We presume that the above insect is what systematic writers would call an aberration of *L. Arion.*—EDS.].

## DESCRIPTION OF A NEW BUTTERFLY FROM JAVA.

### BY THOMAS CHAPMAN.

EUPLŒA LORRAINI, *sp. n.*

*Upper-side:* ♀. Both wings deep black. Fore-wing: three small white spots near the costa beyond the middle; a transverse band of six white spots near the apex; the second, third, and fourth from the costa much larger than the rest; within the outer margin an irregular row of fourteen white spots; a white dot just beyond the cell. Hind-wing: a line of twelve white spots within the hind margin, and within a few smaller white dots towards the apex.

*Under-side:* Brown, marked as the upper-side, with the addition of a white dot near the extremity of the cell in the fore-wing.

Expanse, 3$\frac{1}{10}$ inches.

Glasgow: *March 1st*, 1873.

## ON CERTAIN BRITISH *HEMIPTERA-HOMOPTERA.*

BY JOHN SCOTT.

*Revision of the genus* Acocephalus, *and descriptions of two species not hitherto recorded as British.*

In the 'Entomologist's Monthly Magazine' for 1865—1866, the Rev. T. A. Marshall gives descriptions of the British species of *Acocephalus* as known to him, but the synonymy of some of them requires transferring, and I simply proceed to show the changes necessary.

### (Sub.) Family IASSINA, Stål.

### Genus *ACOCEPHALUS*, Germ.

1. *A. rusticus*, Fab., as described by Marshall is correct. It is extremely variable in colour and size, so that innumerable varieties have been described as species. Fieber cites 18; and probably does not exhaust the list.
2. *A. bifasciatus*, Lin. The references and description in this case are also correct. Fieber mentions five varieties of this insect which have been described as species.
3. *A. albifrons*, Lin. Marshall refers *albiger*, Germ., to this species, but Fieber gives it as a variety of his *polystolus*, a description of which will follow.
4. *A. rivularis*, Germ. Fieber refers *histrionicus*, Fall., to this species, and not to *histrionicus*, Fab., as stated by Marshall.
5. *A. histrionicus*, Fab. With the above alteration, Marshall's description and references are correct.
6. *A. arenicola*, Marshall. Fieber, to whom I submitted one of Marshall's examples, returned it to me as only a var. of *albifrons*: and with this opinion I confess I must agree.
7. *A. agrestis*, Fab. Removed from this genus by Flor (followed by Fieber) to his genus *Strongylocephalus*. There can be no doubt about the correctness of the removal, as the most cursory glance at the shape of the head will at once determine. The head in *Acocephalus* is generally pointed, shovel-shaped and hollow on the upper surface; while that of *S. agrestis* is convex.

### Acocephalus interruptus, Fieb.

*nigritus*, Kirschb. *var.*

Dark pitchy-brown, not shining.

*Head*: pitchy-brown, deeply concave, with a central and two elevated side lines, *posterior margin* yellow, anterior margin above finely spotted with yellow, beneath brown. *Face* yellow, on each side of the centre of the anterior margin a blackish fovea. *Clypeus* brown. *Cheeks:* apex brown, enclosing a yellow spot next the base of the clypeus. *Eyes* black. *Rostrum* piceous.

*Thorax: pronotum* black anteriorly, and with five longitudinal depressions; lateral margins narrowly whitish; posteriorly sordid yellowish-white. *Scutellum* dark brown, apical half paler. *Elytra* dark pitchy-brown; *clavus*—1st nerve whitish at the apex; *corium*—anterior margin with a longish white streak beyond the middle, joined to a transverse wavy white streak, sometimes interrupted, and reaching the inner margin; before the centre of the disc a somewhat reniform white spot; inner margin and apex narrowly white. *Sternum* pale yellow. *Legs* brownish-yellow; *thighs*—1st pair brown, with one or two short, pale, longitudinal streaks and spots, extending from the base to beyond the middle; 2nd and 3rd pairs pale, apex brown; *tibiæ*—1st pair dark brown or pitchy; 2nd pale, base brown, apex dark brown; 3rd pitchy-brown, darkest at the apex, spines brown; *tarsi* of all the pairs pitchy, base of the 1st joint narrowly clear brown.

*Abdomen* beneath black, sides of the 5th segment with a short, transverse whitish streak; posterior margin of the 6th yellow. *Connexivum* beneath black, outer and inner margins narrowly yellow; genital plates of the ♂ brown.

Length, 1¾ lines.

This species is somewhat broad for its size, has a 'squat' appearance, and is unlike any of the varieties of *A. rusticus* (which it resembles only in its dullness) known to me.

I possess a single ♂ example, taken by myself either at Eltham or Bexley on 26th July, 1863.

### ACOCEPHALUS POLYSTOLUS, Fieb.

Dark or pitchy-brown, slightly shining.

*Head* yellow; in front spotted with brown, the spots minute and more or less united; down the centre, from the base to about the middle, is a slightly elevated, very fine brown line. *Face* and *cheeks* yellow, the former with an extremely narrow dark brown or pitchy margin. *Antennæ:* two basal joints white. *Eyes* pitchy-black.

*Thorax: pronotum* yellow, very finely wrinkled transversely; posterior half dark brown. *Scutellum* brownish-yellow, basal angles and a central line dark brown. *Elytra* dark or pitchy-brown; *corium*—finely shagreened between the nerves; anterior margin at the base yellowish, and with two white spots of irregular shape, placed one before and one beyond the middle; 4th nerve with two white spots in a line with those on the anterior margin; apex white. *Sternum* yellow. *Legs* yellow; *tibiæ*—1st and 2nd pairs at the apex broadly black, 3rd brownish, apex black; *tarsi* pitchy.

*Abdomen* beneath pitchy-brown; genital plates of the ♂ pitchy-brown.

Length, 1¼ lines.

The white spots on the elytra more resemble those on *A. interruptus* than any of the varieties of *A. albifrons*, to which last insect it is allied, and from which it may at once be separated by the gradual tapering of its elytra from the base to the apex. In *A. polystolus* also the elytra are not so shining or transparent in appearance.

I have a single ♂, evidently taken some years ago, but unfortunately without reference as to time or place of capture.

Fieber enumerates six other species, none of which seem likely to occur here, except it be *A. granulatus*, Fieb., taken at Crefeld, or *A. obtusifrons*, Kirschb., from Rippoldau.

Lee: *January*, 1873.

## NOTES ON BRITISH *TORTRICES.*

### BY C. G. BARRETT.

*(continued from p.* 215.)

*Ditula augustiorana*, Haw.—Professor Zeller states that this species, which is so abundant with us, is not found in Germany, except in the south.

*Ptycholoma Lecheana*, Linn.—The very dark form of the female, which sometimes occurs with us, seems to be unknown in Germany.

*Notocelia Udmanniana*, Linn.

*Pardia tripunctana*, Fab.

*Spilonota roborana* (Schiff.) Treitschke.—This name is superseded by Dr. Wocke in favor of *cynosbana*, Fab. (Systema Entom. 1775).

It seems, however, difficult to understand why *cynosbana*, Fab., should be adopted. Fabricius says simply "upper wings grey, tipped with white," which would apply to twenty different species. He also makes it synonymic with *cynosbatella*, Linn., which is described as having a crested thorax, and therefore cannot be a *Spilonota*. The only clue to Wocke's reason for this determination is, that *cynosbatella (cynosbana)* is described as feeding in rose buds, which is undoubtedly (and unhappily) the habit of the present species.

Treitschke (1830) describes it as *roborana*, and this name it seems advisable to retain.

*Spilonota rosæcolana*, Dbld.—Wocke admits this species into his catalogue with *(præc. var.?)*. It certainly is not, however, a variety of *suffusana* (*trimaculana*, Haw.), but perfectly distinct. Here, at Norwich, where *suffusana* is abundant, *rosæcolana* seems totally absent. Indeed, I think that Wilkinson is wrong in saying that it is pretty generally distributed over the country. I have only seen it from the south of England. It always frequents rose trees, while *suffusana* is most partial to hawthorn.

Professor Zeller writes: "I must agree to its being a good species, "which I never saw alive, and which has not yet been observed in "Germany."

*Spilonota trimaculana*, Haw.—This is *suffusana* of Zeller and of Doubleday's list, and this name is also adopted by Wocke, apparently because, although Haworth's name is much the oldest, this species is considered to be too nearly related to *Grapholita (Steganoptycha) trimaculana*, Denovan, to bear the same name. I confess that this does not appear to me sufficient reason for sinking Haworth's name.

*Spilonota amœnana*, Hüb. (248), Tr., Dup.—Wocke sinks this name in favor of *incarnatana*, Hüb. (191); and, as that name was adopted by Heinemann, it is probably correct; but Hübner's plates appear to bear no dates. This species appears to vary according to soil. On the rocks of the Hill of Howth, where it was common, the specimens were quite different in colour from those of the neighbouring sand-hills and the opposite English coast; and inland specimens appear to be larger and more rosy.

*Lithographia campoliliana* (Schiff.), Tr.—Wocke corrects this to *subocellana*, Donovan (1806), this name being long anterior to that of Treitschke, while Schiffermüller's name is without sufficient description.

According to M. Jourdheuille, the larva feeds under leaves of sallows, in October.

*Lithographia cinerana*, Haw.—Mr. Doubleday, in his list, sinks this into a variety of the following species, as does Wocke also; and Professor Zeller says "I do not believe in its being distinct from "*nisella*. *Nisella*, L., is a rarer variety connected with *cinerana* by "passages." In this country we find *cinerana* by far the rarer variety, but I think that it cannot be retained as a distinct species.

*Lithographia nisella*, Clerck.—M. Jourdheuille says that the young larvæ, after leaving the catkins of poplar and sallow, are polyphagous.

*Lithographia Penkleriana*, F. v. R.—According to M. Jourdheuille, the larva of this species feeds in the catkins of alder, in March.

*Phlœodes tetraquetrana*, Haw.

*Phlœodes immundana*, F. v. R.—I once found this species swarming among some alders, in August, in a marsh. With this exception, I always found it scarce, as Wilkinson says.

*Phlœodes Demarniana*, F. v. R.—According to M. Jourdheuille, the larva of this species feeds in catkins of birch and poplar, in April.

*Phlœodes crenana*, Hüb.

*Note on Tribolium confusum, Duv., and Ptinus testaceus, Ol.*—Though these two species have not yet been inserted in the catalogue of British *Coleoptera*, they have, I think, a good claim to a place there. Duval, in describing *T. confusum*, says that it exists in several of the French collections, but is confounded with *ferrugineum*, and is, in fact, the species described by Mulsant as *ferrugineum*. Of *Ptinus testaceus*, Boieldieu says that it inhabits temperate Europe, and is rather common in wheat granaries. I have specimens of each of these species in my British collection; but I do not think that I captured any of them myself, so that I can give no clue to their locality.—D. Sharp, Eccles, Thornhill: *March 17th*, 1873.

[Dr. Sharp some time ago called my attention to these species, pointing out the *gradual* dilatation of the antennæ towards the apex in the *Tribolium*, of which I find an example mixed with *ferrugineum* in my own collection. It is rather larger, broader and flatter than the latter species, with the thorax more rounded at the sides in front. The *Ptinus* is, I believe, the 5 *sp.*—? of Mr. Waterhouse's catalogue, readily distinguishable from *P. fur* by its want of any tufts of white hair in the middle of the back of the thorax.—E. C. R.]

*Curious locality for Homalium Allardi.*—To the insects mentioned at p. 8 of the Ent. Ann. for 1873, as having occurred in association with birds, may be added the above-named somewhat rare beetle, which (with others) I have taken in my parrot cage, when hung outside the house in warm weather.—T. Morley, 57, John Street, Pendleton, Manchester: *March*, 1873.

[This Staphylinid seems of nomadic habits. If I remember rightly, Dr. Sharp has taken it in the heart of London—I think in the precincts of Guy's Hospital,—about old bones.—E. C. R.]

*Clytus erythrocephalus in England.*—Mr. Rye's recent note reminds me that I took a specimen of this insect in my garden here, many years ago. As I had received some large boxes containing skins of birds and insects from North America during the previous winter, I thought the beetle had probably been brought over in the pupa state in the wood of which the boxes were made. I think I gave the specimen to the late John Curtis.—Henry Doubleday, Epping: *March 3rd*, 1873.

*Note on Elater pomonæ.*—I think it desirable to note for the information of others whose supposed exponents of this species may have been derived from the same source as my own, that all the specimens (4 in number) bought by me of the late Charles Turner as representing *E. pomonæ*, and stated to have been taken by him in the New Forest, are merely small examples of *E. lythropterus* (which appears to vary from 6¾-lin. to 4½-lin.), with fulvous thoracic pubescence. The precept "*Caveat emptor*" should, of course, have been borne in mind by me.

As regards the species supposed by me to be intended by the name of *E. pomonæ*, I have just seen an example, dug, with others, out of a dead birch tree in Sherwood Forest, by Mr. J. Ray Hardy. This one, a ♂, agrees with another ♂ example, obtained by me through Mr. E. W. Janson, in differing at once from the immaculate form of *sanguinolentus* by its lesser bulk, rather less convex thorax (which is more *straightly contracted* towards the front, more finely punctured, and clothed with long and thin *black* hairs), the longer joints of its antennæ, its thinner tarsi, and somewhat flatter and more acuminate elytra. In fact, it rather more recals *elongatulus;* from which its slightly larger size, unicolorous and brighter red elytra, of which the interstices are more convex, longer antennæ, &c., will serve to distinguish it. Mr. G. R. Waterhouse (Trans. Ent. Soc. 5, n.s., p. 90) originally pointed out the long *black* thoracic hairs of Stephen's specimen of *pomonæ*, and of others of his own from the New Forest taken by Turner (which I have seen, and of which the males agree with the two above mentioned), as the distinguishing character between that species and *sanguinolentus;* and Dr. Candèze (Mon. Elat. ii, p. 445), merely referring to a single specimen of Mr. Waterhouse's from the New Forest, is evidently somewhat sceptical as to its specific value, and also mentions only the black hairs as separating it from *sanguinolentus.* He quotes Stephen's "Man. of Brit. Coleopt. p. 179;" referring to which work, I find the following description, &c.:—"Rather narrow; black, clothed with *fuscous* pile (Stephens refers to black hairs in describing other species); thorax slightly convex; elytra blood-red, *tip black*, punctate-striate; tarsi pitchy (L. 4¼—5¼ l.). Darenth Wood; Barmouth." How this is to be reconciled with Candèze's "*longius nigro-pubescens, elytris immaculatis*," passes my comprehension: nor does it appear to me safe to refer Stephens's specimen above mentioned to the species described in the 'Manual.'—E. C. Rye, Park Field, Putney, S.W.: *March*, 1873.

*Note on Otiorhynchus tenebricosus.*—I should be glad if any correspondent could send me a British type (♂ if possible) of this species. None of my own somewhat long series can, I think, be correctly referred to it. They all seem to quadrate better with *O. lugdunensis*, Boh., Schön., Stierlin (De Marseul, Mon. Otiorhynch., L'Ab. x, p. 147), in which there is no frontal foveola, and the male has the anal segment of the abdomen somewhat deeply foveolate at the tip as well as rather coarsely striated. In *tenebricosus* there appears to be a frontal foveola, and the ♂ has the anal segment strongly striated, but with no fovea at the apex. De Marseul states that it is common in the Jura, fails in Austria, and is replaced in France by *lugdunensis*.

It would be somewhat curious if it turn out that we have neither *tenebricosus* nor *fuscipes* in Britain.—Id.

*Notes on winter captures of Coleoptera.*—An occasional spare hour or two has, since Christmas, produced the following species, among many others, within less than a mile and a half of Sheerness. As I do not keep a collection of *Coleoptera*, the insects have been sent to my friend Mr. Champion, to whom I am indebted for the names of most of the species.

In stack-refuse:—*Falagria sulcatula, Callicerus obscurus, Homalota orphana, Bryaxis Waterhousii, Hister neglectus, Atomaria munda* (by hundreds) and *gutta* (common), *Anommatus 12-striatus, Monotoma spinicollis, rufa*, and *longicollis, Corticaria Wollastoni, Throscus obtusus* (not very rare), *Apion Schœnherri* (about twenty specimens, many of which, unfortunately, were badly broken, possibly through having hibernated), *A. confluens* and *lævicolle*, and *Phyllotreta sinuata* (one ♂ specimen). *Trogophlœus foveolatus*, about eight specimens, in company with T. halophilus: Bagöus *laticollis* and *inceratus*, in flood refuse on the banks of a brackish ditch. Syncalypta *hirsuta*, Sharp; a few specimens, along with *Harpalus parallelus*, by shaking moss growing on a heap of sea gravel. *Polystichus* in abundance, by digging in the loose clayey earth, at the bottoms of posts by the road-side.

Three days' collecting in the Chatham district, in January, February, and March respectively, also produced a fair number of beetles, the best being as follows:—*Trachys troglodytes*, one specimen, shaken out of moss on a chalky hill-side; the moss from similar places producing *Mycetoporus nanus* (several), and *splendens*, *Syncalypta hirsuta* (rarely), *spinosa* (in profusion), *Trachyphlœus alternans* (not rare), *squamulatus* and *spinimanus* (abundant), *Tychius lineatulus*, *Mantura Matthewsi*, &c. *Pediacus dermestoides*, one specimen under bark of a felled oak; *Abræus globosus*, not rare in the wet rotten wood of an old ash, in which I also found *Quedius infuscatus*; *Paromalus flavicornis*, *Cerylon histeroides* and *ferrugineum* (both in considerable numbers, the latter being the commoner), and *Orchesia undulata*, under the loose bark of a prostrate and very rotten beech; *Asclera cærulea*, in quantity, in a very large old decayed stem of ivy; *Tomicus Saxeseni*, a few in a sound oak log; *Platynaspis villosa*, two or three hibernating in a fungoid growth on a small dead beech tree.

At Iwade, at the end of January, I met with *Crepidodera pubescens* in some numbers, in a very limited quantity of flood-refuse on the banks of a small stream.—James J. Walker, 7, West Street, Blue Town, Sheerness: *March 11th*, 1873.

*Notes on rare British Coleoptera from the Manchester district.*—I have obtained the following species from the neighbourhood of Manchester:—

*Monohammus sartor*; one, bred by me from a larva found feeding in American spruce. *M. sutor*; one, given to me alive by Mr. M. Ward, by a friend of whom it was taken at rest on one of the pine supports of a coal mine near Dukinfield. *M. dentator*; an example of this North American species, which has on several occasions been taken in England, was given to me by a friend, who took it amongst American pine logs in the wharf of the Bridgewater Trust. *Donacia obscura* and *crassipes*, *Athous rhombeus*, *Euglenes oculatus*, *Dorcatoma chrysomelina* and *Phlœotrya Stephensi*, Cheshire; *Otiorhynchus maurus* and *Aphodius fœtidus*, Staly brushes.—Joseph Chappell, 1, Naylor Street, Hulme, Manchester: *February*, 1873.

*Note on Apatura Iris and A. Ilia.*—I am not surprised to see Mr. Doubleday again in the field in defence of the European "species" of *Lepidoptera*; but I *am* surprised that he should speak of "the Asiatic *form* of *A. Ilia*," seeing there are two very different forms in Japan alone, one of them exactly like the European type, the other, *A. Here*, Felder, more like Mr. Tritton's insect.

When Mr. Doubleday says that *A. Ilia* never feeds on oak, he of course makes a mental reservation in favour of Mr. Tritton's specimen, found "in the larva state, upon the oak." That an unusual food-plant does in some circumstances affect the character of the imago seems pretty evident. Darwin says (Variation of animals and plants, vol. ii, p. 280): "it is well known that caterpillars fed on different food, sometimes either themselves acquire a different colour or produce moths different in colour." That this is not mere assertion, may be seen by Michely's experiments (*Bull. Soc. Imp.* d'Acclimat. viii, p. 563), as also by those of Mr. Gregson in the case of *Abraxas grossulariata* (Proc. Ent. Soc., January 6th, 1862), confirmed by

Mr. Greening (Proc. Northern Ent. Soc., July 28th, 1862). For analogous facts in *Hymenoptera*, see Westwood (Modern Class. Ins., vol. ii, p. 98); also Dr. L. Möller (Die Abhängigkeit der Insecten, 1867, p. 70).

That difference of food-plants, and not the soil these grow in, is the cause of some of these variations, I have myself proved in the case of *Odonestis potatoria;* young larvæ of which were sent to me from Brighton by my friend Mr. Herbert Goss, and produced the same varieties when similarly fed both at Brighton and South Kensington.

I still think Mr. Hammond's suggestion worth following up; let young larvæ or eggs of *A. Iris* be placed upon oak leaves, and if the caterpillars refuse them, this one fact will be worth a host of suppositions. I have known some caterpillars in straits to eat almost anything.—A. G. Butler, 17, Oxford Road, Ealing: *March 3rd,* 1873.

[The following passages occur in the account given by the supposed breeder of the specimen of *A. Ilia*:—

"I have no recollection what the chrysalis was like."

"The butterfly did not come out of the chrysalis for so long that I thought it was dead."

Now, the writer of the above quoted remarks looked daily at his *Ilia* chrysalis for several weeks, wondering why the butterfly did not emerge, and yet has no recollection what the chrysalis was like. One would have thought that any one who had such a curious chrysalis under such circumstances, could have made a sketch of it from memory, even after an interval of twenty years. Spiritualists and others, ready to accept any statement, however improbable, may believe the tale; we candidly confess that we do not.—Eds.].

*List of the species of Lepidoptera first discovered in Britain by the late Mr. J. C. Dale.*—*Hesperia Actæon,* Esp.; August 15th, 1832; Lulworth. *Lælia cœnosa,* Hb.; July 26th, 1819; Whittlesea Mere. *Psyche nigricans,* Curtis; June 18th, 1824; West Parley. *Celæna Haworthi,* Curtis; July 23rd, 1819; Trundle Mere. *Leucania littoralis,* Curtis; July 8th, 1824; Mount Misery. *Boarmia cinctaria,* W.V.; June 2nd, 1823; Brockenhurst. *Fidonia brunneata,* Steph.; July 8th, 1825; Dunkeld. *Carsia imbutata,* Hübn.; August 8th, 1825; Loch Katrine. *Acidalia straminata,* Tr.; July 31st, 1820; Parley Heath. *Stenia punctalis,* W.V.; July 6th, 1822; Weymouth. *Scoparia Daleana;* August 8th, 1825; Rannoch. *S. alpina,* Dale; July 11th, 1825; Schehallion. *S. ulmella,* Dale; July 13th, 1844; Bordean. *Crambus latistrius,* Haw.; July 3rd, 1821; Parley Heath. *C. furcatellus,* Zett.; July 19th, 1825; Ben Lawers. *C. Warringtonellus,* Staint.; July 3rd, 1835; Bear Wood. *C. uliginosellus,* Z.; June 25th, 1815; Glanvilles' Wootton. *Retinia sylvestrana,* Curtis; August 12th, 1845; Parley Heath. *Cerostoma asperella,* L.; September 8th, 1815; Glanvilles' Wootton. *Acrolepia betuletella,* Curtis; August 4th, 1837; Castle Eden Dene. *Gracilaria imperialella,* Mann; May 25th, 1840; Glanvilles' Wootton. *Coleophora Frischella,* L.: July 11th, 1831; Portland. *Asychna terminella,* Westw.; June 8th, 1836; Glanvilles' Wootton. *Pterophorus similidactylus,* Dale; July 26th, 1830; Glanvilles' Wootton. 24 species in all.—C. W. Dale, Glanvilles' Wootton: *February* 5th, 1873.

*Chærocampa Celerio at Cromer.*—A few days ago, some insects captured last autumn, by a lady, at Cromer, were brought to me for names; among them were four specimens of *C. Celerio*, but in wretched condition. The same lady took, also at Cromer, a specimen of *Vanessa Antiopa.*—W. H. Harwood, Colchester: *January*, 1873.

*Description of the larva of Anisopteryx æscularia.*—On the 3rd of April last, I received from Mr. W. J. Skelton, of Faversham, eggs of this species. Some of the young larvæ had emerged on the way, and the remainder of the eggs hatched immediately. The larvæ grew rapidly on hawthorn, and by the middle of May were going down. The full-grown caterpillar may be described as follows:—Length about an inch, slender, cylindrical, and of uniform width throughout; head globular, slightly broader than the second segment; skin soft and smooth. Ground colour bright green, strongly tinged with yellow; head uniformly green. A dark green line, very narrowly edged with grey, forms the dorsal stripe; the sub-dorsal and spiracular lines greyish-white; and between the sub-dorsal and spiracular lines is a very fine pale grey line. The segmental divisions yellow, and the spiracles black. Ventral surface uniformly bright green, with the segmental divisions yellow.

By the end of May all the larvæ had gone down, and the imagos from them are now emerging; nineteen males had emerged when the first female put in an appearance.—Geo. T. Porritt, Huddersfield: *March 11th*, 1873.

*Occurrence in Britain of Halonota grandævana, Zeller.*—The fortunate captor of this fine species is Mr. C. Eales, of South Shields, who took a single specimen on July 6th, 1872, flying over "ballast heaps" near that place. It is a small, pale variety of the species, being only one inch in expanse, and having the markings obsolete, except a faint indication of the outer edge of the basal blotch. The brown dots along the costal and hind margins are, however, rather distinct. Mr. Eales tells me that when flying it bore a close resemblance to *Tortrix icterana*, for which he at first took it. I have submitted it to Professor Zeller, to whom I am indebted for its name, and also for fine and well-marked specimens from the Alps, from which the following description has been taken:—

Halonota grandævana, Zeller.—Head, palpi, thorax, and abdomen pale brownish-grey, antennæ brown, eyes black; fore-wings broad, ashy, much irrorated with minute, pale brown streaks and dots; markings, when present, very pale brown, consisting of the strongly angulated outer edge of the usual basal blotch, and a narrow, broken, oblique central fascia, interrupted above the inner margin; costal and hinder margins spotted with pale brown, cilia ashy; hind-wings pale grey, darker at the apex, cilia whitish. Alar. exp. 1—1½ in.

It seems to be a widely distributed species, occurring in Northern and Western Germany, and on the shores of the Baltic. Its larva feeds in the roots of *Petasitis albus* and *Tussilago farfara*, and probably also in those of *Petasitis vulgaris*.

Wocke places this species in a separate section of his genus *Grapholitha*, the nearest British species being *Mixodia Hawkerana* on one hand, and *Catoptria expallidana* on the other. It is, however, in spite of its broad wings, closely allied to *Halonota turbidana* and *inopiana*, near which it is placed by Heinemann.—*Chas. G. Barrett*, Norwich: *March*, 1873.

*Dragon-flies at sea.*—The very wide distribution of many species of Dragon-flies is well known to all who have given their attention to those insects, and is hardly to be wondered at, considering the great development of the wing-muscles and the strength of the nervures. Yet, on the other hand, many species with all the external attributes of physical strength, appear to be extremely local; and one is tempted to believe that an imperious migratory instinct has often more to do with the geographical range of some species, than mere power of wing. The species with the widest distribution is undoubtedly *Pantala flavescens*, Fab., which is found over the greater part of the globe, excepting in Europe (for we cannot but regard its reported occurrence in England* otherwise than as accidental, or based on mistaken evidence). The next most widely spread species is *Tholymis Tillarga*, Fab., which is found in all tropical and sub-tropical Asia, Australia, and Africa, in the islands of the Pacific, and even in Chili. In part of April and May, 1856, I observed numbers of these at sea during a protracted calm in the lower part of the China Sea. They did not settle on the ship, but flew leisurely at some little height over the surface of the water, apparently as much at home as if hawking over the paddy-fields of the adjacent islands. One specimen then caught is still in my collection. No doubt they were taking advantage of a (to them) congenial atmospheric condition, in order to make an over-sea journey. It would not be unnatural to suppose that the rivers of the country where they had been bred were dried up by the excessive heat, and that they were seeking localities favourable for the development of their future progeny; but this must not be taken for granted, because the familiar *Libellula quadrimaculata* of the temperate regions of the Northern Hemisphere is a notorious wanderer, without the excuse of a drought.—R. McLachlan, Lewisham: *March*, 1873.

*On mounting small insects for microscopic observation.*—Something has lately been said upon the subject of mounting insects; the following plan will prove a good one for the smaller *Diptera*:—Take an ordinary microscope slide and fasten to it three vulcanite rings for cells (these are cheap, and easily procured), in each of which a Dipteron should be set out; as soon as it is killed, fasten its body to the glass in the centre of the cell, by gum or cement, then put out the legs, and when these are dry, set the wings, taking care to use as little gum as possible; then fasten a circular talc or very fine glass lid to the cell, label it, and the specimen is complete. Each slide should represent one sex of a species; one with the back upwards, a second with the legs towards you, and a third dissected. Such a collection is cheaply preserved, takes little space, and is at once available for the microscope. I have tried the plan with *Aphides* and minute *Diptera*, and it seems to me that the lesser *Staphylinidæ* might also be advantageously mounted in the same manner. —R. C. R. Jordan, 35, Harborne Road, Edgbaston, Birmingham: *Feb.* 10*th*, 1873.

*The Zoological Record.*—The appearance of the volume for 1872 has been vexatiously delayed, owing to the Recorder of the lower animals having failed to fulfil his engagements. We are happy to announce, however, that the Committee have resolved not to wait for him, but to bring out the other parts at once; and before this number of the Magazine is published, these will be in the hands of the

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* A specimen (described as *Libellula Sparshalli*) is supposed to have been taken in Horning Fen.—R. McL.

Members and Subscribers of the Zoological Record Association. The Insecta, as usual, occupy much space, and the recorded notes on the publications on that division of Zoology in 1871 amount to 234 pages. Entomological students are certainly not diminishing in number. New Subscribers should at once forward their Subscription (£1) to Mr. H. T. Stainton, Mountsfield, Lewisham, London, S.E.—Eds.

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Entomological Society of London, *17th February*, 1873.—Prof. Westwood, President, in the Chair.

A. E. Hudd, Esq. (formerly a Subscriber) was elected an Ordinary Member, and Dr. H. Burmeister a Foreign Member.

Mr. Bond exhibited long series of bred specimens of *Acronycta psi* and *tridens*, with preserved larvæ of the two species. The *tridens* had all been reared from pear. He remarked that the dark specimens so often occurring in *A. psi* were never represented in *tridens*, and that the latter always possessed a pinkish tint in fine fresh bred specimens, which, however, was very evanescent.

Mr. Müller exhibited the egg-case of some species of *Mantidæ*, and a case of a species of *Psychidæ* formed of pieces of twig arranged spirally; these had been sent from India by Mr. Rothney.

Prof. Westwood exhibited two dipterous larvæ discharged by a woman in a clot of phlegm. They appeared to belong to *Psila rosæ*, which is known to feed upon carrots, and he suggested, when they were submitted to him, that the person had possibly been eating raw carrots, which, upon enquiry, was found to be probably the case. These larvæ had lived for three days in alcohol. He also exhibited tubercles on vine-stems, probably formed by a beetle of the genus *Otiorhynchus*. Mr. Müller remarked that Mr. Riley had recorded a similar habit in an American beetle (*Baridius Sesostris*, Lec.). Prof. Westwood further exhibited roots of vine dilated and constricted in a joint-like manner, which he thought was probably owing to former attacks of *Phylloxera*.

Mr. Briggs exhibited parallel series of the large and small form of *Anaitis plagiata*; both had been taken in Tilgate Forest in June in separate years, which proved that the small form was not a second brood as commonly supposed.

Mr. H. W. Bates read a paper on the Geodephagous *Coleoptera* of Japan. He described or enumerated 241 species, whereof 118 were new and chiefly collected by Mr. George Lewis. Nine genera were peculiar to Japan; 44 genera were common to Japan and Western Europe; 52 European genera were not found in Japan, and 38 from Japan were not found in Europe. One genus had only previously been known from North America.

Mr. Müller read a list of entomological works and papers published up to the year 1862, no notice of which was to be found in Dr. Hagen's 'Bibliotheca Entomologica;' he expressed a wish that other Entomologists would, in like manner, make known any similar omissions that might be detected by them.

Mr. Smith read a translation of Prof. Siebold's paper on the salivary glands of the Honey-Bee. Prof. Siebold had obtained honey by feeding bees upon malt. Mr. Smith further read a list of the *Vespidæ* and *Apidæ* occurring in Japan, chiefly from materials collected by Mr. G. Lewis and his native assistant; of 73 species, 49 were previously unknown. He remarked that the distinctness of his *Apis nigrocincta* trom *A. mellifica*, recently questioned by Dr. Gerstäcker, had been abundantly confirmed by the discovery of a queen of *A. nigrocincta*.

*3rd March*, 1873.—Prof. Westwood, President, in the Chair.

Mr. Noah Greening and Mr. Edward Charles Buxton were elected Ordinary Members.

Mr. Howard Vaughan exhibited a box containing about 200 specimens of Japanese *Lepidoptera*, collected by Mr. Henry Pryer near Yokohama. Several appeared to be new species and some very closely resembled common British species.

The President remarked that Mr. Higgins had shown him a specimen of a *Cremastochilus* from Japan, which was identical with a species taken by Mr. Lord on the West Coast of North America.

Mr. F. Smith exhibited some insects bearing a striking resemblance to each other, although belonging to different Orders. Thus, *Euglossa dimidiata* and another *Euglossa*, a genus of bees, had a striking resemblance to two species of the dipterous genus *Asilus* from South America; also *Abispa splendida*, one of the *Vespidæ*, and an insect of the dipterous genus *Laphria*, both from New Holland; also a bee of the genus *Megachile* and one of the *Asilidæ*. With regard to the last-mentioned insects, Mr. Smith noticed that the *Asilus* not only resembled the bee in general appearance, but also was furnished on the under-side with a brush, in the same manner as in *Megachile*, although it was not apparent for what purpose the insect required it. The President remarked that, when he was at Casa Brucciata, near Ancona, he observed several insects of the genus *Osmia* extracting the black pollen from poppies; and on the sandy shore he noticed the same insects collecting sand on their ventral brushes. He therefore concluded that the brushes were used, not only for collecting pollen, but also for collecting grains of sand to carry to the nests which he observed them in the act of constructing on walls.

Mr. Champion exhibited *Bagous brevis*, Schön., an insect new to the British fauna, taken by Dr. Power (see p. 242 of the present Vol.).

Mr. Müller directed attention to an article in the 'Petites Nouvelles,' explaining a method of obtaining the silk from cocoons which had been broken through by the insects, and that the silk so obtained from the damaged cocoons was equal in quality to that obtained from the perfect cocoons, and did not require to be carded.

The President remarked that the library at Oxford had lately been much infested with *Anthreni;* and he was glad to observe that there was a paper by Dr. Emery, in the 'Bulletino della Società Entomologica Italiana,' on a new method of preserving collections from their ravages.

*17th March*, 1873.—Prof. Westwood, President, in the Chair.

M. Ernest Olivier, of Moulins (France), grandson of the old French entomologist of the same name, was elected a Foreign Member.

Prof. Westwood exhibited an exceedingly rare species of *Paussus*, from Abyssinia.

Mr. Smith exhibited a further collection of *Formicidæ* collected by Mr. Rothney, chiefly in the immediate vicinity of Calcutta. The collection was in beautiful condition, and Mr. Smith paid a high compliment to the industry and intelligence exhibited by Mr. Rothney in his researches in this department of entomology. Connected with Mr. Rothney's collection, Mr. Smith made another exhibition of what were apparently three examples of the Ant *Sima rufogriseum* placed side by side, but the middle specimen was in reality a spider of the genus *Salticus*, having its anterior legs purposely removed, and then presenting a wonderful resemblance to the Ant, which, like it, inhabits trees.

Mr. Cole exhibited a series of magnificent species of *Bombycidæ* sent from Natal by Dr. Seaman.

Mr. Bates said that Mr. Darwin had put to him a question affecting the theory of sexual differences in the eye-like spots on butterflies. Mr. Weir considered that the number of these spots on the under-side of *Pararge Hyperanthus* were more numerous in the ♀ than in the ♂, and Mr. Butler thought that differences of this kind existed in the genus *Drusillus*.

Mr. Bates read a paper on the Geodephaga of China, complementary to that recently read by him on the Japanese species of the group. Many of the species were collected by Mr. George Lewis at Kewkiang, in North China, and five-sixths of these occurred also in Japan.

Mr. Dunning read a further note on *Atropos pulsatoria*, with reference to Dr. Hagen and Mr. W. Arnold Lewis. Mr. Dunning said that he had been sanguine enough to expect that when he had pointed out Mr. Lewis' mis-statement in the charge made by him against Dr. Hagen, it would have been at once withdrawn. However, instead of this having been done, Mr. Lewis had repeated his charge, and stated that the difference between Mr. Dunning and him was only one of words. Mr. Dunning said, as this was Mr. Lewis' understanding of what he had written, he was not surprised that Mr. Lewis had misrepresented Dr. Hagen, and that Mr. Lewis must entertain a very low estimate of the intelligence of entomologists, if he thought they would be convinced by such a verbal quibble. Mr. Lewis had brought fresh charges against Dr. Hagen with reference to *Termes fatidicum*, but Mr. Dunning said he had not previously alluded to this case, and that it was as if Mr. Lewis, in prosecuting a man for bigamy, had said in reply to the defence, that at any rate he had been guilty of forgery. Mr. Dunning declined to go into this matter, and concluded by paying a high compliment to the labours of the distinguished entomologist who had been thus maligned by Mr. Lewis.

Prof. Westwood, in asking the Meeting to return a vote of thanks to Mr. Dunning, said it was like breaking a fly upon the wheel, and he was sure that Dr. Hagen would have the good sense not to feel serious annoyance at the silly attack Mr. Lewis had thought proper to make upon him.

Mr. Müller made some remarks with reference to a beetle (*Aræocerus coffeæ*), which he had taken alive in 1862, at Basle, while watching the unpacking of a bale of coffee from Java. He had lately received a letter from a friend at Basle, stating that he could now take any quantity of the species in that town. He thought this fact showed how insects living on merchandize are spread along the main trade routes, and become gradually acclimatized—Basle being one of the chief continental markets for storing foreign merchandize.

Mr. Müller also stated that a case of ground nuts (*Arachis hypogæa*) arrived in London in the summer of 1863, from Sierra Leone, and that the husks were riddled, and the kernels half eaten, by myriads of larvæ and perfect insects of *Tribolium ferrugineum*, accompanied by the corresponding stages of a species of *Rhizophagus*, preying on the former. The cargo was allowed to remain during the months of August, September, and October, the whole being rendered worthless through the delay and ignorance of the owner.

# ON THE PECTINICORN *COLEOPTERA* OF JAPAN, WITH DESCRIPTIONS OF THREE NEW SPECIES.

BY CHAS. O. WATERHOUSE.

The following species have already been recorded from Japan:—*Lucanus maculifemoratus*, Motsch., *Cladognathus inclinatus*, Motsch., *Clad. Motschulskyi*, C. Waterh., *Eurytrachelus platymelus*, Saund., *Macrodorcas niponensis*, Voll. (*M. rectus* and *M. rugipennis*, ? Mots.), *M. cribellatus*, Motsch., *M. striatipennis*, Motsch., *M. opacus*, C. Waterh.

To these must be added the following new species of *Ægus*, of which several specimens were brought from Japan by Mr. G. Lewis.

## ÆGUS SUBNITIDUS, *sp. nov.*

♂ *(var. minor ?). Niger, subnitidus, sub-depressus, mandibulis arcuatis, cylindricis, ad basin dente acuto abrupte armatis; capite fere ut in Æ. lævicolle; thorace nitido, suprà parcius (latera versùs dense et fortiter) punctato; elytris nitidis, fortiter crenato-striatis, interstitiis* 3, 5, 7. *sqt dense punctatis, suturâ interstitiisque* 1, 2, 4, 6 *parcius et subtiliter punctulatis; lateribus dense et fortiter punctatis.*

*Long. cum mandib.* 8 *lin.*

Closely allied to *Æ. Formosæ*, Bates, but distinguished by the lesser punctuation (when comparing specimens of about the same size), and cylindrical mandibles, which are not gradually dilated into a triangular tooth at the base, but have an abrupt, sharp tooth.

I can find no satisfactory character whereby to distinguish the ♀ from that of *Æ. lævicollis*.

The two following species of *Figulus* also appear to be undescribed:

## FIGULUS BINODULUS, *sp. nov.*

Elongate, parallel, slightly convex, black. Head slightly concave above; anterior margin nearly straight, gently emarginate at the base of each mandible; the clypeus obtusely bidentate. The side of the head between the outer base of the mandible and the canthus of the eye is in the direction of an angle of 45° with the anterior margin, and is slightly emarginate; canthus rounded, depressed; the head broadest in a line with the front of the eyes, contracted behind; the upper surface with a few punctures on the forehead, moderately closely and strongly punctured on the canthus and about the eyes. The mandibles are short and strong, when closed they interlock for about half their length. Thorax a little broader than long, rather broader than the head, the sides parallel, anteriorly cut out to receive the head, the anterior angles rather prominent and rounded, the posterior angle broadly rounded; the surface impunctate, with the exception of a strongly punctured furrow in the middle, and some irregular larger punctures towards the sides, the sides very delicately and sparingly punctured; the anterior margin is furnished in the middle with a single tubercle directed forwards. Elytra scarcely as broad as the thorax, a little longer than the thorax, head and mandibles together; the five dorsal striæ are deep, and not visibly punctured, the sixth is slightly punctured, and the seventh more distinctly, the eighth and ninth are composed of not very deep punctures; the dorsal interstices are gently convex. Length, 6⅕ lin. (13 mill.); width, 2 lin.

*Hab.*: S. Japan. Coll. Lewis and British Museum.

*Variety*, immature. A specimen has the three outer striæ of the elytra composed only of punctures. Length, 6¾ lin.

### Figulus punctatus, *sp. nov.*

Head concave above, thickly and strongly punctured, the anterior margin is emarginate between the mandibles, the clypeus is almost imperceptibly bidentate; the side between the outer base of the mandible and the canthus of the eye is slightly oblique and very slightly emarginate (not nearly so oblique as in the former species); the canthus is narrow, with a very slightly prominent obtuse angle (nearly a rectangle) in front; very gently curved, terminating posteriorly in an obtuse angle, longitudinally canaliculate between the eye and the outer margin, which is thickened. The head is broadest in a line with the back of the eyes. The mandibles are curved and acuminate, with a single tooth in the middle on the inner side. The thorax is broader than the head, rather broader than long, with a broad, strongly punctured furrow in the middle, on each side of which the surface is sparingly and thickly punctured, towards the sides it is strongly and thickly punctured; there is a distinct tubercle on the anterior margin; this margin is gently emarginate to receive the head, the anterior angles are evenly rounded, the sides are sub-parallel, the posterior angles are broadly rounded. The elytra are the same width as the thorax, and have the five dorsal striæ deep and only the fifth scarcely visibly punctured, the sixth to the ninth are distinctly and strongly punctured, becoming less deep towards the margins; the dorsal interstices are scarcely convex, and are impunctate. The sides of the thorax and the shoulders of the elytra are minutely crenulate.

Length, 5 lin.; width, 1⅔ lin.

*Hab.*: S. Japan. Coll. Lewis and Brit. Mus.

British Museum: *March* 21*st*, 1873.

## ON A NEW COLEOPTEROUS GENUS FROM JAPAN.

BY T. VERNON WOLLASTON, M.A., F.L.S.

### Fam. CORYLOPHIDÆ ?.

### Genus Aphanocephalus.

Corpus sub-rotundatum, hemisphæricum, convexum, nitidum, supra calvum, subtus remote et parce sericatum: prothorace sub-semicirculari, postice latitudine elytrorum ad basin, angulis posticis leviter productis acutis, antice vix excavato sed truncato et paululum elevato (caput parvum sub-perpendiculare fere tegente), ad latera anguste sed distincte marginato; scutello magno, triangulari: elytris apice

integris, pygidium tegentibus, ad latera grosse incrassato-marginatis: alis amplis: prosterno inter coxas anticas obtuse declivi; mesosterno antice in medio rotundate producto sed vix lobato; metasterno magno, convexo, antice recte sed postice arcuatim truncato; abdomine e segmentis 5 composito, 1mo magno, 2do, 3tio, 4toque brevibus, transversis, æqualibus. Antennæ (prothorace haud longiores) 10-articulatæ, valde et subito clavatæ, articulo 1mo magno elongato clavato, 2do multo minore subovali, 3tio (elongato) 4to et 5to gracilibus, longitudine decrescentibus, 6to 7mo et 8vo gradatim subglobosis, 9no et 10mo clavam magnam abruptam solidissimam (vix perspicue divisam) ovalem sed antice truncatam efficientibus. Labrum coriaceum, sub-quadratum, antice integrum ac breviter parceque ciliatum. Mandibulæ sub-triangulares, apicem versus valde incurvæ acutissimæ et profunde bifidæ, atque mox intra apicem denticulo minuto brevi instructæ, dein (longe infra hoc) denticulo altero elongato gracili incurvo (apice bifido) auctæ, et inde (in emarginatione internâ) membranâ densissime ac minutissime pectinato-fimbriatâ repletæ. Maxillæ bilobæ, inarmatæ; lobo externo elongato, subrecto, apice dense piloso; interno breviore sed subrecto, angusto, dense barbato. Palpi maxillares articulo 1mo minuto, 2do maximo inflato, 3tio paulo angustiore brevissimo transverso, ultimo elongato fusiformi basi truncato (antice sub-attenuato); labiales articulo 1mo minuto, 2do magno inflato, ultimo fusiformi basi truncato. Ligula sub-quadrata, apice membranacea integra et etiam sub-rotundata (nullo modo emarginata), postice magis coriacea. Mentum (nisi fallor) valde membranaceum. Pedes sub-contractiles, sub-graciles, antici parum late, intermedii latius, postici latissime distantes; tibiis elongatis, gracilibus, inarmatis; tarsis (ut mihi videtur) vere 3-articulatis, articulis 1mo et 2do sub-æqualibus subtus paulo productis ac longe pubescentibus, sed haud bilobis, 3tio elongato, unguiculis magnis simplicibus munito.

Ab "*Aphanes*," e visu absconditus, et "*Cephale*," caput.

The affinities of this curious genus, which is founded on a small insect captured by Mr. G. Lewis in the Japanese Archipelago, are extremely difficult; for, whilst it possesses some of the characters of the *Coccinellidæ* and others of the *Endomychidæ*, its freedom from a securiform last joint to its maxillary palpi would (even alone) seem to remove it from the former, whilst the fact of its feet being composed (as it appears to me) of only three articulations (for I can detect no trace of a minute third one in the central region of the second), debars it equally from them both. On the whole, taking into account the reduced number of its antennal joints (which, at the utmost, cannot be regarded as more than ten), its hemispherical outline, and the significant shape of its peculiarly coloured prothorax, which is nearly entire in front, *almost* concealing from view the small and sub-perpendicular, or dependent, head, and has the posterior angles rather acutely produced, as well as the proportions of its under-segments and its largely-developed scutellum and wings, I am inclined to believe that it will be more natural to treat it as a gigantic and aberrant member of the *Corylophidæ;* though at the same time I am

fully aware that in its maxillæ being distinctly bilobed, and its feet (as I cannot but think) strictly trimerous, it is removed in two very important particulars from the members of that family. Still, tarsal joints are so apt to be difficult, occasionally, of precise determination, that it is not impossible that I may be mistaken in defining them in this instance as positively only three in number, and that an excessively diminutive articulation *may* be concealed at the base of the elongated terminal one; in which case *one* at all events of the points in which it disagrees with the *Corylophidæ* would be taken away.

In many of its secondary details, *Aphanocephalus* is sufficiently in harmony with certain of the types around *Corylophus*,—such, for instance, as the somewhat inflated second joint, and the fusiform ultimate one, of its maxillary and labial palpi, as well as its unemarginated ligula and upper lip; but in the unusually abbreviated *third* joint of its maxillary palpi it is singular; and its mandibles (which are deeply bifid at their tip, and have a minute denticle immediately within the apex) are remarkable for being furnished with a sharp, incurved, and minutely *cleft* additional tooth, considerably below the denticle to which I have just alluded, and at the commencement of the membranaceous portion which fills up the large internal cavity. In its antennæ, only nine articulations can be distinctly counted (a number which, no less than that of *ten*, is quite in keeping with certain groups of the *Corylophidæ*); but it is evident that their extremely solid and abrupt club is in reality made up of (at all events) two, and that they should more properly therefore be defined as 10-jointed; and the coarse margin of its elytra, in conjunction with the narrower one of its prothorax, gives the genus an additional feature which ought not to be overlooked.

The only family (with the exception of the *Trichopterygidæ*) in which, so far as I am aware, the feet are strictly 3-articulate is the *Lathridiadæ*; but it would be almost preposterous to suppose that *Aphanocephalus* can have anything in common, beyond the abnormal number of its tarsi joints, with the members of that department: and yet a few of its *other* peculiarities likewise, more particularly as regards the construction of its antennæ and capitulum, are by no means distantly paralleled in (for instance) the genus *Cholovocera*.

### APHANOCEPHALUS HEMISPHÆRICUS, *n. sp.*

A. sub-rotundatus, hemisphæricus, nitidus, supra convexus calvus et æneo-viriditinctus, sed subtus minutissime parceque sericatus ac rufo-piceus; capite parvo, subperpendiculari (fere e visu abscondito), piceo-ferrugineo; prothorace elytrisque ad juncturam latitudine æqualibus, subtilissime levissimeque punctulatis, illo subsemicirculari angulis posticis acute leviter productis, ad latera (anguste marginata) et antice gradatim suffuse ferrugineo, his ad latera crassius marginatis; antennis pedibusque infuscate testaceis. Long. corp. lin. circa 1⅓.

*Habitat* insulas Japonicas, præcipue sub foliis dejectis a Dom. G. Lewis repertus.

Teignmouth: *April*, 1873.

## ADDITIONS AND CORRECTIONS TO THE LIST OF BRITISH *SYRPHIDÆ.*

*(concluded from p.* 256.)

BY G. H. VERRALL.

### 11. MELANOSTOMA QUADRIMACULATUM, *sp. n.*

♂ ♀. *Nigra, oculis hirtulis; fronte epistomateque latis; antennis nigro-piceis; scutello brunneo, abdomine vel maculis quatuor flavis* (♂) *ornato vel toto nigro* (♀); *pedibus nigro-piceis.* *Long.* 3½—4¼ *lin.*

♂. Eyes rather hairy; the black punctulate frons and epistoma are wide, the middle knob of the latter shining, they are clothed with abundant erect black hairs, slightly longest on the frons, and leaving the middle of the epistoma bare; the face is rather descending, the eyes extending downwards much less than usual, leaving the cheeks unusally broad; in profile, the frons appears inflated, the epistoma descending straight to the slight, but distinct middle knob; the wide cheeks are clothed with black hairs, but the cilia round the back of the head are pale yellow; there is a bare-looking space on the lower half between the back of the head and the eyes, which, however, in another light, is seen to be clothed with numerous short black hairs; the vertex is clothed with rather long black hairs, yellow behind on the occiput; the antennæ are pitchy-black, the third joint often with a brownish reflection, the arista bare.

Thorax dull black, faintly punctate, clothed with a long, tolerably abundant pubescence, except on the fore part (this pubescence is generally all pale yellowish except just about the base of the wings, but smaller specimens frequently have the pubescence nearly all black; on the breast-sides it is long, shaggy, and black); the scutellum is brownish, rather dull, with an extra long yellow pubescence round the edge, more whitish on the disc; alulæ pale yellow, their edges and the knob of the halteres yellow. Abdomen rather dull bluish-black, rough but scarcely punctate; near the basal corners of the third and fourth segments are elongate yellow spots not touching the fore margin, and only indistinctly, if at all, connected with the edge; the hind margins of the fourth and fifth segments are obscurely reddish; the pubescence round the edge is all long, black, except at the base of the third, fourth, and fifth segments, where it is yellow, on the disc are scattered yellowish hairs; the genitalia are black and rounded, with black pubescence; belly dull blackish, the spots shining through obscurely. Legs pitchy-black, front tibiæ very slightly brownish; pubescence on the front femora long, abundant, black at the tip, yellowish about the base, on the middle pair not quite so abundant, and on the hind pair there is a slighter yellowish pubescence in front near the base, and a short, inconspicuous, mostly black pubescence on the rest; the short pubescence on the front tibiæ is often conspicuously yellowish down the inside and on the basal joints of the tarsi; the hind tibiæ are thin at the base and rather bent just below the middle, hind tarsi long and thin. Wings distinctly tinged with grey, stigma brownish, conspicuous.

♀. All black; frons broad, its pubescence short, black and abundant, the extreme margins of the antennal space are luteous; cheeks with grey tomentum and pubescence, the cilia on the back of the head grey, almost whitish above and at the back of the vertex; thorax and scutellum with rather abundant pale greyish-yellow pubescence, the tuft on the breast-sides also greyish-yellow; the scutellum with a distinct yellowish hue on the disc; alulæ and halteres paler than on the male. Abdomen shining black, or blackish-brown, rather coarsely but sparingly punctate, the hind margin of the fourth and fifth segments slightly reddish; the pubescence not scarce, but fine, all pale, except at the end of the third segment, on the hinder half of the fourth, and on all the fifth except the basal corners; in some lights there appears a trace of pale tomentum near the basal corners of the third and fourth segments, where the yellow spots are in the male, and I have found in one case these spots faintly visible; the legs are coloured as in the male, their pubescence is almost as abundant, but all the long hairs are pale; the ovipositor is somewhat conspicuous.

This species must be rather common in Scotland, as I have seen a large series captured by Dr. Buchanan White (whom I have to thank for my specimens) at Kinnoull on March 25th, 1871, and another large series caught by him at Braemar in May, 1871. The two specimens belonging to Mr. B. Cooke which I originally called *M. barbifrons*, are, I expect, from one of the northern English counties. I originally considered this species to represent Fallén's *Scæva barbifrons*, and I think it is still open to doubt, as in Fallén's description the only point distinctly opposed to this species is "oculi tamen nudi," and on the other hand "macula in segmento 3 et 4 utrinque laterali flava" applies strictly to no other species I am acquainted with. Loew, however, informs me that the species I have introduced in this paper as *Syrphus barbifrons* (No. 7) occurs on the continent without the basal spots, and states that he has seen no continental species with hairy eyes. It is also only natural that Zetterstedt should thoroughly recognise Fallén's species, and he admits that his *S. nitidula* is the female of *S. barbifrons*, and as *S. nitidula* is a true *Syrphus*, it would follow that *S. barbifrons* could not be a *Melanostoma*. This species proves the purely artificial nature of the genus *Melanostoma*, as *Syrphus barbifrons*, ♂ (though to my eyes a true *Syrphus*), so far troubled Schiner, the author of the genus *Melanostoma*, that he would not believe it to be the male of *S. nitidula*, and even separated the sexes generically; *M. quadrimaculatum* also differs from all the other species of the genus in its hairy eyes and brown scutellum (approaching *Syrphus* in both these respects), but falls without hesitation into the genus from the peculiarity of the immaculate female.

12. PLATYCHIRUS LATIMANUS, Whlbg.—In my remarks on the British species of *Platychirus* in this Magazine (November, 1870), I said that any further addition to our indigenous species was hardly to be expected. I have, however, another to add, which I suppose must be Wahlberg's *Pl. latimanus*, of which I have seen a series captured by Dr. Buchanan White at Dunkeld, a male from Scotland, in my own collection, and a male bred by Mr. T. N. Hoey (who has kindly given me the specimen) from a pupa swept up from heather in Tilgate Forest. The species superficially resembles *P. albimanus*, but is smaller and broader in front, in shape being similar to *Melanostoma ambiguum*, ♂, but the peculiar front tarsi of the male at once distinguish it. In the specimens I have seen, the male has the frons broad and inflated, bearing a conspicuous depressed lunule above the antennæ, the inflation extends from the frons to more than half way down the sides of the epistoma, and the frons and all the inflated part are clothed with moderately long, rather abundant black hairs; the back of the head is rather inflated; the antennæ are rather short, blackish-brown. The thorax is shining æneous-black, faintly punctate; the abdomen dull black, with three pairs of hoary or whitish spots; the basal pair near the middle of the second segment, has the inner side of each spot rounded, and the outer side touching the edge of abdomen; the second pair of spots are nearly similar, but rather narrower, and are quite clear of the fore margin, but reach the edge; the pair on the fourth segment are rather nearer the fore-margin, and about the basal corners of the fifth segment are traces of another pair of spots. The legs are blackish, the front pair with the knees brown, the femora with a tolerably abundant, slightly waved, black pubescence behind, long near the base; the tibiæ slightly curved, slightly larger towards the tip than at the base, but not dilated, bearing outside a rather long and wavy but not conspicuous fringe of black hairs, and inside being obscurely yellowish on the apical third; the tarsi with the two basal joints pale yellow, very considerably dilated, forming an oval disc. The first joint at its base is not at all broader than the tip of the tibia, but rapidly dilates, being at its broadest part (just before its end) more than three times as broad; it is about

one and a-half times as long as broad, and is five or six times as long as the very slightly narrower second joint; beneath these joints is a large blackish blotch running across diagonally near the base of the first joint, and about the tip of this joint are some dark spots; the other three joints are dull blackish and simple. The middle legs have the knees dull yellowish, the tibiæ slightly curved, and the two basal joints of the tarsi clear luteous, the pubescence behind the femora is much less than that on the front pair, and the tibiæ bear outside, about the middle, a slight fringe of longish hairs; the hind tibiæ are slightly bent before the tip, and the basal joint of the hind tarsi is considerably dilated and lengthened. The wings have a greyish tinge, the stigma is brownish.

The female is smaller and blacker, the abdominal spots being more indistinct, the frons extra broad, the abdomen more shining, the knees more distinctly yellowish, the front tarsi all brownish and simple, the basal joints of the hind tarsi large and long, but not at all conspicuously dilated.

I am thus exact in describing this species, as my insects differ from Wahlberg's and Zetterstedt's description, sufficiently to raise doubts as to their identity. Wahlberg, in his original description (Ofv. k. vet.-akad. Förh. i, 66), says "abdomine— "maculis flavidis—geniculis anterioribus latius posticis anguste "testaceis; *metatarsis posticis parum incrassatis*—Mas, maculis "abdominis obtuse sub-trigonis; tibiis anticis simplicibus; *meta-"tarsis anticis* modice *oblique dilatatis*, latitudine duplo longi-"oribus, cum *articulo secundo quadrato*, dilatato, albidis; femoribus "anterioribus lateri posteriori, posticis anteriori, longius ciliatis. "Femina—metatarsis fusco-testaceis—Mas, *pedes intermedii arti-"culis tarsorum* 2 *primis basi apiceque angustissime testaceis.* "*Femina, pedes anteriores femoribus basi* angustissime apice fere "ad dimidium, tibiis basi ad dimidium et apice angustissime "*testaceis.*" Zetterstedt further says "Mas—*pedes antici, tibiis* "*albidis* pone medium late nigricantibus, *tarsorum articulis* 1*mo* "*oblique,* 2*doque sub-quadratim, dilatatis. Fem.—abdomen multo* "*latius quam in* ♂, maculis sex transversis, elongatis, fascias "3 rectas interruptas, albo-flavidas constituentibus." Where I have italicized in these quotations, the descriptions differ considerably from my species, yet in opposition to this, I place the strong probability of the same species occurring in considerable numbers (as it does) in North Europe and Scotland.

13. CHILOSIA OLIVACEA, Zett.—Amongst some British *Syrphidæ* of Mr. F. Walker's, I found a male specimen which I am inclined to refer to this species, of which the following diagnosis gives the principal characters. ♂: olivacea, *oculis hirtis; epistomate hirto*, descendente; antennis fusco-nigris, seta sub-nuda; *scutello pilis validis nigris; abdomine* oblongo, æneo, *luteo hirto; pedibus nigris, tibiis* anterioribus *basi fulvis; alulis flavidis;* alis infuscatis. Long. 4½ lin.

It resembles *pigra*, but is distinguished by its smaller, more defined epistomal knob, on the sides of which the erect hairs are paler; by the shorter and blacker pubescence of the thorax and scutellum; by the pale yellow alulæ, with luteous edges and fringes, which, in *pigra*, are reddish-brown with brownish fringes; by the luteous, instead of black, pubescence at the end of the third and fourth abdominal segments; and by the absence of any chestnut hue on the second joint of the antennæ.

From *melanopa*, according to Loew's description, it would differ by its larger size, less prominent front, and by the absence of any black hairs on the hinder half of the fourth abdominal segment, and on the genitalia. Zetterstedt describes the knees in his diagnosis as whitish, but in his description testaceous. This species has hitherto only been recorded from Scandinavia.

14. CHRYSOCHLAMYS RUFICORNIS.—Among some *Diptera* collected by the late Mr. Dossetor, and given to me by Mr. E. W. Janson, was a pair of this species, which has been found over most of Europe north of the Alps, and therefore might be expected to occur in England. It is very similar to *C. cuprea*, but is usually rather smaller and narrower, with redder antennæ, and more especially with a red or reddish arista; the dull fasciæ on the abdomen are broader, especially in the middle, and placed just *before* the hind margin of the segments, leaving the hind margin itself shining; the scutellum is more yellow-haired, and the tibiæ bear no short black setæ, as in *C. cuprea.*

15. XYLOTA CONFINIS, Zett.—This species is allied to the common *X. segnis*, L., but is usually smaller, the red portion of the abdomen is more yellowish, with more or less black about the junction of the second and third segments, and on the disc of the second segment, and it also bear traces of whitish reflections about the sides near the base of the abdomen, and on the sides of the

fourth segment. The hind femora in *confinis* have, on the underside, only a slight cilia of short spines, while in *segnis* the spines are long and conspicuous, and in *segnis*, ♂, the hind trochanters bear a much longer spine. In *confinis*, the black on the tibiæ is more conspicuous, and occupies the end rather than the middle. I caught one male near Three Bridges in August, 1872.

16. PARAGUS ALBIFRONS, Fall.—Among Mr. F. Walker's *Diptera*, was a male of this little species, which he thinks was caught in the Isle of Wight. As it is found all over Europe, it is sure to occur on the coasts of England, and I therefore introduce it without hesitation. It is easily distinguished from all other species by the entirely yellow epistoma of the male (the female having a black middle line in all species), the yellow tip to the scutellum, and the interrupted arcs of whitish tomentum on the abdomen. The abdomen varies in often bearing some red spots, and the legs often bear dark rings on the hind tibiæ, &c.

With these additions and corrections, the number of British *Syrphidæ* will be 190, as I have here added 12 and withdrawn one; we are therefore rapidly approaching the 200 species, which I anticipated when my list was published in January, 1870.

The Mulberries, Denmark Hill, London, S.E.:
*February*, 1873.

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## ON THE LARVA OF *SPHINX CONVOLVULI* AND ITS HABITS.

BY WILLIAM BUCKLER.

My warm thanks are due to Mr. H. Laver of Colchester, for the loan of a larva, and to Mr. James J. Walker of Sheerness, for the pupa of this grand species, during the past autumn. Previously, I had seen but the dead specimen of the larva, recorded at E. M. M., vol. v, p. 161; and it may be supposed how elated I was to have the opportunity of depicting a living example, and of noting its movements and behaviour.

The larva, which had been found in a field at Mersea, Essex, reached me on September 24th, 1872, and continued to feed until noon of the 28th, and on the evening of the 29th, it retired to earth; I had, therefore, the pleasure of watching it for five days.

From the time of its arrival it showed no aversion to strong daylight, nor any disposition to wander away from the food supplied to *it, but* remained attached to the *Convolvulus arvensis*, although exposed openly each day for eight or nine hours on a table near a window, with the afternoon sun frequently shining on it during that time: in all those hours its position was but little changed, merely advanced farther along the stem by slow degrees, with perhaps a turn to the right or left in order to get at the leaves in their order on the stem; so that three or four inches would represent adequately the extent of its day's progress; another proof of its very lethargic demeanour at this stage, at least, of its growth is given by the fact, that each morning I found it almost invariably on the same part of the food plant, and in a similar posture as when placed in its cage the previous evening; nor did it seem to be a nocturnal feeder, of which, I had fair presumptive evidence by finding usually in the morning only one pellet of frass: throughout the day it fed frequently, taking rest in the intervals, and its meals were deliberate, never made ravenously or hurriedly, nor did it consume much at a time; the number of pellets ejected during the day-time averaged about five; and they were large in proportion. With a view of testing if it had any inclination to hide or burrow, I placed the larva once during the day-time, and once also at night, on some fine mould, but it seemed unwilling to stay on the earth, and soon crawled up through the *Convolvulus* which had been placed over it, and took up its position as usual on the stem of the plant.

Such were the habits of this individual on its approach to maturity, and they perfectly coincide with the account given by Mr. J. Boswell Syme, of those which he once reared (see E. M. M., vii, p. 139): the opinion therefore expressed at pp. 161–2 of vol. v, that this species may hide itself by day under the soil is proved to be erroneous, and my friend Mr. Hellins is very glad to be so clearly set right on this point. Why, however, the moth should in some seasons swarm in this country to such a prodigious extent as it does, and yet the large-sized open-feeding larva be so seldom found, seems strange; Boisduval says, in France the larva "is sufficiently common," feeding especially on *Convolvulus arvensis* in fields of potatoes and kidney beans, sometimes also on *C. sepium*, and in gardens on *C. tricolor* and *Ipomæa coccinea;* and, in a letter to Mr. G. C. Bignell, Mr. G. F. Mathew, R.N., mentions that in Madeira it is said to be common in gardens, feeding on all sorts of *Convolvulus*, on lettuce, and other garden plants.

Potato fields in soils which *Convolvulus arvensis* affects, would seem to be the most likely hunting grounds in England; July? August, and September, would be the proper months in which to look for it; and, if any of the readers of this Magazine should be lucky enough to find any variety of the larva, differing from that which I shall presently describe, I shall be most thankful for the loan of it, and will make the best return in my power. Boisduval, after making two grand varieties, the green and the brown, proceeds to enumerate no less than three sub-varieties under each of these heads, and then says, beside these six there are to be found yet others.

To complete my history of the individual I had the pleasure of watching, I may say that it increased slightly, though perceptibly in length and bulk, till on the fourth day it ceased to eat, became extremely restless and active, and on being supplied with soil, entered it for pupation on the evening of the fifth; unfortunately, however, it died without completing the change, the earth proving too dry and friable, I found it had not been able to make a chamber for itself, after having gone down to a depth of two inches.

The pupa, which as mentioned by Mr. Walker at p. 162 of *this* vol., had been found in a *potato* field, in the Isle of Sheppy, reached me on December 11th, in lively condition, and, I am glad to say, it bore the journey hither and back, as well as the ordeal of sitting for its portrait, without any detriment.

The larva, when full-grown, measured exactly four inches, and in diameter five-eighths of an inch: it was cylindrical, though tapering gradually from the fifth segment to the head, which was decidedly the smallest segment, and flattened in front; the thirteenth also tapered a little at the end; the twelfth bore a smoothish dorsal pointed horn, arching backwards over the anal flap; the segmental divisions were deeply defined, as were also the intermediate wrinkles, which subdivided each segment of the body above into eight distinct rings, the first ring wider than the others, but none of them extending beyond the spiracles; the ventral legs full and stout; the anal pair large and of a squarish form; the texture of the skin was smooth, but for the most part without gloss.

The colour of the head was bright ochreous, and shining, the sutures finely outlined with black, and with two black stripes on each lobe down the side of the face; the general ground colour of the back, belly, and part of the side, was a deep blackish-brown; the sub-dorsal bright ochreous stripe was quite perfect on the thoracic segments, but, beyond them, showed only as a squarish spot on the first ring of each segment until the twelfth, where it faintly continued to the base of the caudal horn; however, its entire course was indicated plainly enough by a double row of deep brownish-ochreous longitudinal little streaks showing on the darker ground; similar streaks of brownish-ochreous covered the rest of the back, but with a regular order and design: there were none on the first of the eight sub-divisions of each segment, but on the other seven there was a double series converging forwards to a point near the second ring, other rows forming a broad bordering to the inconspicuous narrow black dorsal line—this line, indeed, would not be very noticeable, were it not better defined on the first ring of each segment; but it was there well relieved between two larger and paler double ochreous streaks often confluent; the side on each segment between the sub-dorsal and spiracular regions was divided into two triangular portions, the upper having its base on the front of the segment, and its apex pointing backwards on the sub-dorsal stripe, and being altogether of the dark ground, the lower triangle having its base on the hinder part of the segment, and its apex pointing forwards on the spiracular region, and being covered with regular transverse lines of whitish-grey dots on a brownish-grey ground; the black oval spiracles were deeply sunk each within a large rounded shining spot of blackish; the broad, whitish, inflated, sub-spiracular stripe was tolerably regular along the thoracic segments, but from the fifth segment it was festooned along in a puckered and tortuous course to the anal flap, followed beneath on most segments by a group of blotches and dots of a similar whiteness; the back of the second segment was glossy; the anterior legs were black and shining, also the caudal horn,* the anal flap greyish-ochreous; the ventral and posterior legs of the ground colour were ringed with dull orange-red near their extremities, which were tipped with dark brown hooks; the belly had a fine ventral line rather darker than the ground, which was thickly freckled over with a paler tint of the same.

The pupa measured $2\frac{11}{16}$ inches in length, and five-eighths of an inch in diameter; its stout proboscis projected a quarter of an inch out from the body, bent downwards at a slight angle for little more than half-an-inch, and then curved round upwards for half the distance towards the underside of the thorax, with which it was in contact near its blunt, rounded extremity: the various parts of the imago within were all remarkably well shown, yet gently rounded off at the prominences, the wing-covers long in proportion, the anal spike short, blunt, and roughish, the proboscis delicately corrugated or ringed; each segment of the abdomen had on the back a narrow transverse band of roughness at its beginning, the rest of the surface smooth and shining; the colour was a light rich mahogany-brown, darker on the head, thorax, and proboscis, and on the last two segments; the legs, antennæ, and wing-covers being the palest portions.

Emsworth: *April*, 1873.

*Note on Xylotrupes dichotomus*, L.—The larva of this insect has been a familiar object to me for some time in Japan: it generally occurs in the friable portions of rubbish-heaps and garden refuse, or in light soils, where there is an abundant growth of rank vegetation. The last larva I remember seeing was in a manure heap at Osaka, where it was snugly lodged under a broken tile. I once had a pupa from a similar situation, in which the horn of the male was well developed. The species is called "Kabuta-mushi" by the Japanese, and its larvæ are known to agriculturists, occurring, as I describe, in the earth, after the manner of those of our ***Melolontha vulgaris***.

***Phileurus chinensis*** I suspect is of a similar habit in its earlier stages, as I have always found the imago near heaps of refuse under planks or tiles; but this species appears late in September, while the larger one is abundant by the middle of July.—George Lewis, Acton Lodge, Beckenham: *March 21st*, 1873.

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* The horn varies in colour; Boisduval says, "it is either fawn above and black beneath, or ferruginous, or of a rusty-red."—W. B.

*Note on Trachyphlœus alternans.*—I observe that Mr. J. J. Walker has recorded (p. 217 of the present vol.) the allied *T. spinimanus* and *squamulatus* as occurring at the roots of *Helianthemum vulgare* in chalky places; and I may remark that I have found *T. alternans* not uncommonly near here on the same yellow cistus, when in blossom, growing on banks by the road-side under chalk hills.—W. Tylden, Stanford, Hythe: *April*, 1873.

*Note on Otiorhynchus monticola, Germ.*—As the nomenclature of our *Otiorhynchi* seems again to be coming under discussion, it may be worth while to inform readers of the Magazine that we have not *Otiorhynchus monticola* as an inhabitant of Britain, all our Scotch specimens so named being *O. blandus*, Sch. It is to this species that Gyllenhal's description of *O. lævigatus* is to be referred (*teste* Thomson); and, on tracing back the question, I find our mistake has arisen from Germar having given *lævigatus*, Gyll., as a synonym of *monticola*, when describing that species. Walton identified his specimens of our species as the *lævigatus* of Gyllenhal, by specimens sent from the Swede himself, and pretty clearly adopted Germar's statement of the identity of *lævigatus*, Gyll., with *monticola*. Stierlin, too, has perpetuated the error, by having failed to distinguish the two insects, and at the same time giving them as distinct. In his monograph, he reproduces the description of *blandus*, stating that it is a species unknown to him, while at the same time, from the localities he gives for *monticola*, and a remark he makes as to Swedish examples he supposed to belong to that species, it is clear he had the two species (or races) before him. The characters distinguishing the two are briefly but lucidly given by Thomson; and I find our Scotch specimens differ from (Pyrenean) *monticola*, just in the same manner as Thomson says Swedish individuals differ therefrom.—D. Sharp, Eccles, Thornhill, Dumfries: *April*, 1873.

*On the supposed new species of European Butterfly.*—There can be no doubt that the *Lycæna Arthurus*, Melvill, described at p. 263 of this Magazine, is an aberration of *Lycæna Arion*, L.; such aberrations are indeed not so very scarce on the Continent. I have in my own collection four such specimens, all differing, it is true, a little from each other, but all almost destitute of black spots on the upper-side; in one specimen, even the black marginal spots are absent. The disappearance of the spots, especially on the under-side, occurs in all the *Lycænidæ;* and also the occasional appearance of black spots in species that are usually destitute of them. Thus, in the variety *Miegii* of *P. virgaureæ*, a number of large black spots appear on the upper-side: this also occurs in *P. Hippothoë*, L. (*chryseis*, Brk.), and in the *Lycæna orbitulus* from the mountains of the North of Persia.

It is my firm conviction that, within the true limits of Europe (certainly not in Central Europe), *no new species* of *Rhopalocera* remains to be discovered—O. Staudinger, Dresden: *April 4th*, 1873.

*Vanessa Antiopa hibernated at Folkestone.*—A hibernated specimen of *V. Antiopa* was taken by my friend Mr. Arthur Gore in a nursery garden at Folkestone, on the 2nd April. Mr. Gore has kindly placed the specimen in my cabinet.—C. A. Briggs, 55, Lincoln's Inn Fields: *April*, 1873.

*Natural History of Polia chi.*—On September 14th, 1869, Mr. Longstaff, then at Forres, kindly sent me a few eggs laid by a female of this species; these began to hatch on April 11th, 1870, and continued at the rate of about one or two per diem until the 22nd. The larvæ, when young, fed chiefly on *Rumex crispus*, and occasionally on some other low plants, they at that time were not particular in their diet, for they seemed to welcome any change given them; but after two or three moults they began to show a decided preference for sallow and osier, and on this food, towards the last, they were entirely kept, until they became mature one after the other, from May 20th to June 5th; the perfect insects appeared from August 10th to 21st.

The egg of *chi* is semi-spherical in form, or rather elliptical at top and flattened beneath at its greatest diameter; deeply ribbed and reticulated; when first laid it is yellowish, and in a few days turns greyish-brown, and, about a week before hatching, a broad zone of flesh colour appears below, while the upper part is a rich crimson-brown; at this time, in respect of colour, variations occur; some of the eggs have a narrow zone of blackish at a distance of two-thirds from the base, while the top is irregularly blotched with this colour.

The young larvæ, when first hatched, were pale olive-greenish, the large head pale brownish with distinct black dots and hairs; but they became in a couple of days rather bluish-green. By April 23rd, the most forward had become half-an-inch in length, very slender, and of a full, deep green colour, with the lines and also the dots paler green: by May 15th, the biggest had grown one inch in length, still slender in proportion, and rather less deep in colour, which, by the 19th, had changed to a yellow-green, and then the fine lines were whitish: by the 27th, the larvæ were in their last coats, and presented but little variation in details; their attitudes were graceful amongst the twigs of sallow and willow, as they bent and elongated themselves when feeding near the extremities of the leaves.

The full-grown larva is one and five-eighths of an inch in length, very slender in proportion, cylindrical, though tapering a little at either end, the head rounded, and the antennal papillæ well developed, the segmental divisions very delicately defined, as well as the intermediate wrinkles, so that the skin appears very smooth and soft. The colour on the head and back is a delicate bluish-green, quite opaque on the back, the dorsal line very thin, a mere pale thread and edged with darker green than the ground colour; the sub-dorsal line is whitish, better defined, and also edged with darker, indeed, this line on the thoracic segments is white; beneath it, as far as the spiracles, the colour is a transparent yellowish, or else a full green, so clear as to show the branchial vessels through it, this colour deepens gradually below till it terminates in a fine blackish-green line, along the lower edge of which are the white spiracles outlined with black; a brilliant pure white stripe follows, very broad along the middle segments, and a little attenuated at each end, often extending along the side of the head towards the mouth, and ending behind at the extremity of the posterior leg; all the legs and belly are rather paler and more yellowish-green than the back; after the thoracic segments the tubercular dots are ranged in threes on either side of the dorsal line, they are paler than the ground, and sometimes ringed with a little darker colour.

The variations seem to be in the depth of the general ground colour, more or less blueness of the green, and the presence or absence of a small blackish oval ring with whitish centre, or false spiracle on the side of the third and fourth segments.

When full-fed, the larva makes a decided cocoon under the surface of the soil, of bits of earth, somewhat toughly spun together; the pupa is nearly six-eighths of an inch long, smooth and regular in outline, tapering gently to each and, the last segment of the abdomen terminating rather bluntly, and furnished with a knob, from which is emitted a pair of *very fine (quite bristle-like)* hooked spines; the colour of the pupa is reddish-brown, and the surface glossy.—Wm. Buckler, Emsworth: *March*, 1873.

*Note on the capture of Pentatoma juniperina.*—On the 26th instant, a fine, clear, and warm day, I made an excursion with my wife to Caterham Valley, for the purpose of grubbing for this insect under the bushes growing within about 300 yards of the Junction Station. For an hour and a half I worked hard and assiduously, but, although the bushes bore fruit, my exertions were barren. Suddenly, something moved on a branch of the bush at which I was at work. It was the veritable creature; and, immediately after, a second put in an appearance. I then folded up my traps and took to searching the junipers. My wife, who had gone away and sat down beneath a bush to eat her lunch, now joined me. I showed her what to look for and gave her a bottle, and it became now, so to speak, a domestic hunt (without a candle). When we left off to return to the train, I found that I had taken seven specimens, while she had taken seventeen. I feel convinced that the Order comprising *Pentatoma* affords a fine scope for study by woman, as the above experience proves her knowingness in these matters.—John Scott, 37, Manor Park, Lee, S.E.: *29th March*, 1873.

## Obituary.

*Thomas Parry.*—British Entomologists (in the west country especially) will regret to hear of the death of this gentleman on the 4th ult., at Merthyr, S. Wales, in the 81st year of his age. He had been engaged for a great number of years in entomological pursuits, and, in addition to a large general collection of British Insects, had acquired a considerable knowledge of their habits and peculiarities.

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Entomological Society of London, *7th March*, 1873.—H. T. Stainton, Esq., F.R.S., Vice-President, in the Chair.

E. C. Lefroy, Esq., was elected a Member.

Mr. Champion exhibited *Tribolium confusum* and *Ptinus testaceus*, recorded as British by Dr. Sharp in the last No. of this Magazine.

Mr. Verrall exhibited *Laphria flava* from Aberdeen, and rare or new species of British *Syrphidæ*.

Mr. F. Smith exhibited a species of bug allied to *Pentatoma*, sent by Mr. Rothney from Calcutta, where it is found on the bark of trees, which it so greatly resembles in colour as only to be detected when moving. Mr. Meldola suggested that this mimicry might allow it to capture its prey with greater facility. Mr. Bates thought, on the other hand, it might protect it from lizards. A discussion ensued as to whether the division of *Hemiptera* to which the insect belongs is carnivorous or phytophagous.

Major Parry communicated a supplemental paper on Lucanoid *Coleoptera*.

Mr. F. Bates sent descriptions of new genera and species of *Tenebrionidæ* from Australia, New Caledonia, &c.

Mr. Müller read a communication from Mr. Bassett, of Waterbury, Connecticut relative to the sexes of *Cynips*. After detailing observations made, Mr. Bassett considered it settled that most American species are double-brooded, and that one generation consists of females only, and is perhaps structurally different from the other generation, and that all apparently unisexual forms are only dimorphic conditions. Mr. Smith repeated the account he had previously given of the manner in which, some years ago, he introduced the now abundant *C. Kollari* in the vicinity of London from Devonshire galls; all the insects were, of course, females.

END OF VOL. IX.

No. 97.] JUNE, 1872. [PRICE 6d.

# THE

# ENTOMOLOGIST'S MONTHLY MAGAZINE.

CONDUCTED BY

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I have Aphodius arenarius and A. sanguinolentus, Apion Kunzei and [illegible] to give to any Coleopterist in want of these species or any of them.—G. C. Champion, 274, Walworth Road, S.E.

Larvæ and pupæ of B. quercus and A. caja, eggs of B. populi, for larvæ or pupæ of A. villica, C. dominula, &c.—R. [illegible], Market Square, Alford, Lincolnshire.

Good specimens of L. multistrigaria, P. chi, C. [illegible], [illegible] and larvæ of B. quercus, for other larvæ or ova.—S. L. Mosley, Almondbury Bank, Huddersfield.

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*Duplicates.*—Larvae of D. vinula; pupae of D. [illegible], V. Io, and a few of C. [illegible]. *Desiderata.*—Larvae of other species.—R. L. Davis, New Town, Waltham oss.

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## ERRATA.

Page 2[illegible], line 15 from bottom, *for* "*st tuberculis*" read "*i tuberculis*."
,, ,, ,, 17 ,, ,, ,, "*carnea*" ,, "*carnea*."
,, 187, ,, 14 ,, top, ,, "*Swale*" ,, "*Tweed*."

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Dr. F. C. Mebs *from* 51, Prince of Wales Road, *to* 50, Brompton Road, S.W.

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## EXCHANGES.

*Duplicates*: fulvago. *Desiderata*: [illegible], testata, [illegible], [illegible], [illegible], [illegible] (?), [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], [illegible], and [illegible].—Geo. T. Porritt, Huddersfield.

*Duplicates.*—A. caja, L. quercus, L. dispar, S. populi, [illegible], [illegible], T. pronuba, [illegible], A. [illegible]. *Desiderata.*—S. tiliæ, A. villica, [illegible], [illegible], O. [illegible].—R. Garfit, Market Square, Alford, Lincolnshire.

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Newcastle-on-Tyne Entomological Society.—The Annual Meeting was held on Tuesday, the 11th Feb., in the Curator's Room of the Museum. Mr. T. Eales read a paper on his captures during the past season, amongst them being one of the Tortrices, which has been found to be the *Cochylis* [illegible], of Stainton and Wocke's List. Mr. Eales stated that fuller particulars would be published in this Magazine through the kindness of Mr. C. G. Barrett.

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In January No., p. 177, line 8 from bottom (Enallagma cyathigerum), *for* "Risley Moss" *read* "Whitley Road."—C. S. G.

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MR. J. C. STEVENS has received instructions to Sell by Auction, towards the end of April, at his Great Room, 38, King Street, Covent Garden, THE WELL-KNOWN COLLECTION OF INSECTS, comprising two large Cabinets full of Exotic Coleoptera, one of Lepidoptera, a Cabinet of British Lepidoptera, and a few drawers filled with Insects of other Orders; also the choice Library of Entomological Books. Further particulars, with date of Sale, will be advertised in the Athenæum and other papers.

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Anonymous.—We have been requested to insert an Advertisement of an anonymous entomological work. Without having the slightest idea who may be the writer of this work, or of the nature of its contents, and being thus placed beyond the possibility of influence by prejudice in the present instance, we take the opportunity of stating that we decline to further in any way the circulation of anonymous publications.—Eds.

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